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LECTURES.

LECTURES ON INTRACRANIAL SURGERY.

V—BRAIN TUMOR AND ITS SURGICAL TREATMENT.

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Operation for brain tumor is certainly an enticing one—the possibilities are so great. The first inducement is the fact that the result from the expectant plan is invariably fatal, generally within two years; the sometimes wonderful changes apparently wrought by internal medication are deceptive—they do not prolong life; and this is believed by some to be true even of syphilitic intracranial growths. A second incentive is that in most instances the almost exact position of the neoplasm can be determined by the well-formulated principles of cerebral localization. And the third is that in a large percentage of cases the growth is situated within reach of the surgeon's knife. The objections to operative treatment are: 1, the possibility of erring in the selection of the point for trephining; 2, the recurrence of the disease; and 3, the high mortality.

While it is possibly true, as Agnew said, that "the results of operations for extirpation of brain tumors can not be considered as particularly brilliant," yet from a study of the cases I have operated on and from the excellent results in the work of many other surgeons, I am compelled to agree with the statement of Bartlett, of Philadelphia, that "in the absence of any reliable cure for brain tumor, one is not justified in waiting long for results if the symptoms are such as to enable him to locate the lesion," providing that it be accessible.

As to the question of location, according to M. Allen Starr, about one-third of all cases occur in the basal ganglia, internal capsule, corpora quadrigemina, crura, pons and medulla, and so are inoperable. Of the remaining two-thirds a considerable percentage must be amenable to surgical treatment. In only four out of seventy-two operations collected by Knapp, the tumor could not be removed. In all the cases I have examined, in only one was I satisfied the growth could not be reached. But even if one should err in attempting to locate the tumor and it should not be found, a large opening in the skull and dura will afford much temporary relief if the dura be not tightly sutured and the fragments of bone be not replaced. Thus in a case reported by Fischer, of Breslau, much improvement occurred from such an operation. And in one of double trephining by Kocher, of Berne, to relieve symptoms when localization was impossible (the only pronounced features being choked disc, deterioration of vision, headache and unsteady gait) an opening was made anteriorly in the frontal region with some bulging of the dura, and one posteriorly just below the tentorium cerebelli where a hernia cerebri formed which was removed by a Volkmann's sharp spoon and the wound closed; union by first intention was secured; four days after the operation the congestion of the discs had entirely disappeared and sight had improved; seven weeks after operation the general condition was much better than it had been, the gait was steadier, the headache gone, etc. To be sure death ultimately resulted in both cases, but the patients were given a short respite and their final days rendered less painful.

If the tumor can be located I believe the indications are to remove it even though it gives but transient relief. Some cases have been *cured* beyond any question, and the cerebral functions, strange as it may seem, restored after removal of even large intracranial growths. For example, Dr. H. H. Mudd, of St. Louis, has reported a case in which an immense echinococcus mass was removed from the brain of a girl 12 years old, the diseased mass being larger than a hen's egg and located in the motor region, reaching from the convexity to the lateral ventricles; after shelling out the tumor the wound was irrigated and the scalp sutured; the hole, large as it was, soon closed up and the motor disturbances disappeared, viz., the tremor and hemiparesis accompanied by hemianopsia and choked disc. In one of my cases I removed a tumor springing from the dura, almost as large as the one just mentioned, and the brain tissue appeared so greatly altered that it seemed as if there never could be restoration of function; yet the symptoms entirely disappeared in due time. Bremer explains the return of function after such colossal defects by the assumption that "the fibers of the corona radiata are not destroyed, but merely pushed asunder; though perhaps the myeline sheaths of these fibers are atrophied by pressure the more resisting axis-cylinders preserve their continuity and so complete regeneration can occur."

Cerebral tumor is of much greater frequency than is generally supposed. Many hundreds of cases have been recently published; Knapp, of New York, alone having compiled more than eleven hundred records of cases and this is a very incomplete report.

The question of fatality is an important one, for while the patient knows that death is inevitable without operation, he is anxious not to have his days cut short by an ambitious surgeon; yet wishes to avail himself of any possibility of cure. What are the chances of life and death? Of seventy-two cases operated on, according to Knapp's figures forty-one recovered and thirty-one died from the operation; in seven cases, (Horsley six, Knapp one) of trephining for relief of pressure alone there was no death. The death rate in Knapp's statistics is 43 per cent., but this is much higher than would be shown by recent cases if collected. The mortality under our present improved technique I place at about 30 per cent., and with increased experience we can reduce this. Of

twenty-eight cases of trephining for deep intracranial troubles in my own work five died—a fatality of less than 18 per cent.; while in my eight cases of tumor operated upon there were two deaths[1]—a mortality of 25 per cent. While this looks like a formidable death rate it must be remembered that nearly if not quite 100 per cent. die if not subjected to operation.

VARIETIES.

Most brain tumors are either syphilitic or tubercular—occurring as gummata or caseous masses respectively, the latter chiefly in young subjects. Other forms more rarely met are osteomata, fibromata, gliomata, sarcomata, carcinomata, choleosteomata and cysts. Tumors other than those just mentioned are very rare, but occasionally cysts of the arachnoid, hydatids, plexiform angio-sarcomata, endotheliomata, etc., are met. The combined tables of Starr, Birch-Hirschfeld and Bernhardt give 1,098 tumors of which there were

Tubercle	371
Glioma	165
Sarcoma	162
Gumma	69
Cysts	47
Carcinoma	28
Glio-sarcoma	18

Myxomata, neuromata, osteomata and other rare growths complete the list. Special consideration of some of these varieties is necessary before proceeding with the discussion of the general features of tumor.

1. *Gliomata.*—These growths, if not very vascular, may be removed easily. They are almost always found in the gray matter. If thoroughly extirpated recurrence is not probable and *all* symptoms may disappear. Thus P. Postemski, of Rome, on May 24, 1891, exhibited to the Royal Academy at Rome a case upon which he had successfully operated some months before; all the symptoms were gone and the woman was (apparently) restored to health.

2. *Fibromata.*—Fibromata, though rare, are always easily accessible as they spring from the meninges; and can therefore be readily extirpated. In the few cases I have been able to discover in recent literature, success has been the result invariably.

3. *Carcinomata.*—Carcinomata are not infrequently met in the brain; they are attended with just as great danger of return after removal as in any other part of the body. They commonly have a mass of hyperemic and softened brain tissue around the morbid growth, but in spite of this they may be cut away, the adjacent tissue being cleaned out by a Paquelin cautery. Personally I have met but one case of carcinoma of the brain; it was so extensive that I did not dare remove it, and I believe it was good surgery to leave it untouched, though the patient lived less than six weeks.

4. *Cysts.*—Cysts are comparatively rare. They can ordinarily be removed without difficulty, though in a case in the practice of Dr. John Punton, of Kansas City, (reported in the *Kansas City Medical Index*, February, 1893) operated upon by myself, there was not sufficient integrity to the cyst wall to allow of removal; the cyst was therefore simply opened and drained. And experience of numerous operators has shown that opening and draining cerebral cysts gives almost as good results as does similar treatment in cerebral abscess.

5. *Gummata.*—Concerning syphilitic growths Horsley remarks: "Cerebral gummata should always be removed—iodid of potassium palliates but does not cure them"—a statement in which all who have studied the subject must concur. The assertion of Agnew may be taken as especially applicable to this class of cases: "The triumph already achieved by the conjoined labors of the neurologist and surgeon may be the harbingers of still greater ones in the future." I have operated twice for syphilitic intracranial growths—with two successful results. One case which I saw in consultation with the late Dr. J. W. Jackson, Chief Surgeon of the Wabash Railway system, gave all the characteristic signs of cerebral gumma, including choked disc, paralysis, etc., and *recovered* under the long-continued use of more than two ounces of iodid of potassium daily and prolonged residence at Hot Springs, Ark. There is a possibility of a wrong diagnosis in this case, but I was sufficiently certain of the existence of the tumor and its location that I would have operated had consent been obtainable. I believe yet, that operation would have been better treatment, for though several years have elapsed without any return of cerebral symptoms, there is quite a probability of trouble for this patient in the future.

6. *Sarcomata.*—Sarcomata found within the cranium are either of the spindle-celled or myeloid varieties. They may spring from the diploë, widely separating the tables and at last breaking through with much suffering, especially if the growth be directed inward. In most instances they develop in the dura mater; the question of extirpation in such cases is of vital importance and is still undecided. They frequently perforate the cranium and spread beneath the scalp, giving a distinct pulsation in the mass, reducibility when small and a characteristic sharp opening in the skull. I believe excision to be the correct thing, the only question which arises being justifiability in advanced cases; and here the subcutaneous injection of the toxins of the streptococcus of erysipelas and of the bacillus prodigiosus, as advised by Colley, certainly should be practiced when extirpation is found to be impossible. But increasing experience in cerebral operations and (particularly) observation of several cases of extensive destruction of the dura, lead me to the conclusion that we may safely remove a much larger portion of the dura than we are wont to believe. I have taken away an area one and one-half by three and one-half inches without apparent ill effect. If the scalp and periosteum can be brought over the hole in the skull so as to completely close it, the brain gets on very well—in certain parts of it at least. In view of which I am of opinion that operation for sarcomata might be successful in more cases than now reported were surgeons less saving of the dura; and even should permanent paralysis result, such a termination is far better than death from the neoplasm.

7. *Osteomata.*—Those concerning us in our study of cerebral surgery are of the inner table or diploë (enostoses). As a rule they are of slow growth and may be left alone; but if serious symptoms arise, as a displacement of the eyeball from osteoma of the frontal sinus, or indications of intracranial pressure, they must be removed.

8. *Tubercle.*—This is the form of tumor generally

[1] One was a cyst of the arachnoid, with hemiplegia and imbecility; from the Indian Territory, referred to me by Dr. O. W. Krueger. The second, sarcoma of the dura, from Dr. J. H. Thompson, of Kansas City. Reports will be published later.

found in childhood and is, it is asserted, the most frequent of all intracranial growths. Dana says it is most often located in the cerebellum. The tubercular tumor is usually irregularly round in shape and varies from one to two inches in diameter, of a grayish-yellow color, not of itself vascular but frequently surrounded by inflamed or even softened brain tissue. These growths are often connected with the central parts of the brain but are also not infrequently developed in the meninges in the parietal region. In a fairly large percentage of cases they are within the safe area of surgical work.

9. *Enchondromata, Lipomata, Angiomata and Neuromata.*—These forms are all rare and demand no special consideration. When accessible they are to be removed just as would be the case if situated in any other part of the body.

SYMPTOMS.

The importance of thoroughly understanding the symptoms of brain tumor can not be over-estimated by the student, because the diagnosis as well as the location of the disease must be determined by a proper interpretation of even the most minute signs. And the greatest diversity of symptoms can not but be noted in different cases, since the characteristics must vary according to the location of the tumor, its rapidity of growth and the age of the patient—so the physician must be careful not to be led astray. It is my design to merely call attention to the most prominent features of the trouble as manifested by its development in different regions.

Generally, when the lesion originates in the frontal lobes the patient first notices a headache which gradually becomes more intense and is persistent; later, the exacerbations assume an agonizing character. Then follows stupor, disturbed sleep, loss of memory, and optic neuritis—sometimes with vomiting; these are associated with more or less pronounced psychical disturbances, *e.g.*, lack of judgment. Yet the frontal convolutions belong to the "latent areas" and so sometimes very grave conditions may exist without marked manifestations.[2] When the tumor has developed sufficiently to encroach upon the motor or speech areas, focal symptoms such as convulsions, paresis or aphasia are added. With the pain there is some local tenderness of the scalp and cranium.

When the tumor is situated in the mid-brain the symptoms are apt to be quite different. There may be the same mental hebetude and tendency to stupor with occasional irritability or childishness, but in addition thereto there will be evidences of more or less profound irritation of the motor centers, yet strange to say, symptoms of interference with speech are not likely to arise when the tumor is located near the speech center; in fact, as a rule, disturbance of speech in cases believed to be tumor are to be regarded as pointing to the pons or medulla and the gray matter at the origin of the cranial nerves rather than to the speech center. The peculiar disturbance of speech consists, in such cases, of a tendency to confluent articulation—that is, to run the syllables together. Jacksonian epilepsy is the chief distinguishing symptom of brain tumor of the central region; when associated with choked disc a mistake in diagnosis is impossible; the tumor is situated at or near the center, presiding over that part of the body first involved in the spasm. There is frequently a feeling of numbness or prickling in a particular spot preceding a general convulsive seizure—an *aura epileptica*—always felt in the same part; or a general convulsion may invariably begin with a contraction of a certain group of muscles; or the spasmodic contraction may be limited to a few muscles, without unconsciousness, the affected area increasing as the tumor develops. Here diagnosis is easy; or at least such cases *always* demand exploratory trephining; and reference to the picture to be shown when discussing surgical localization—representing the various functions of the numerous gyri of the mid-brain—will show the exact location of the lesion (tumor or other local disease) which can be readily determined by external measurement.

Tumors growing in the posterior parietal region are commonly unaccompanied by marked symptoms until far advanced, though if the supramarginal gyrus be implicated there may be some disturbance of the muscular sense; and word-blindness may appear when the angular gyrus and the inferior lobule are involved. In addition to these there will be the usual disturbances of consciousness and symptoms discoverable in the eye, presently to be mentioned.

Tumors lying near the occipital lobes—so as to press upon or involve the cuneus and first occipital convolutions—give rise to homonymous hemianopsia, while if they exert their influence chiefly in the direction of the angular gyrus, word blindness may accompany the half vision; and if the parietal lobe be also implicated there may be added hemianesthesia and hemiataxia.

Tumors located in the temporal area can not as a rule be diagnosticated (or at least the situation decided upon). The exception is that if the neoplasm be in the left hemisphere and affect the posterior part of the first and the upper posterior part of the second temporal convolution, word deafness will be a symptom which will correctly indicate the point to be exposed by operation.

Tumors of the corpus callosum and of the opticostriate region present a slowly progressive hemiplegia in addition to general pressure symptoms, and are beyond reach.

Brain tumor may give a slow and soft pulse from the general intracranial pressure, or from irritation of the vagus center.

Disturbances of consciousness have already been alluded to, but deserve further consideration. In tumors which grow with great rapidity the stupor or mental hebetude may speedily develop into coma; but in cases more inclined to chronicity a condition of semi-stupor is frequently a prominent symptom—suggesting thrombosis and hence not characteristic of tumor; deep stupor or even coma is quite common in the last stages when the surrounding cerebral substance is becoming softened, or when an anemic condition of the brain is produced by pressure on important blood-vessels or by their involvement by disease progression. In such cases the eye symptoms in conjunction with the peculiar mental trouble will enable the physician to recognize the character of the trouble. But in the earlier stages a different kind of stupor is occasionally met, not dependent upon severe structural changes in parts of the brain other than those immediately involved in the growth; in which cases the somnolent condition is due to general cere-

[2] Illustrating this point, I may mention a case in which I evacuated an abscess involving a large part of the frontal lobes, yet there was no evidence of mental disturbance save a tendency to somnolence.

bral hyperemia; it may or may not be associated with general convulsions. It is liable to appear suddenly, disappearing in a few hours; or it may continue for several days and then subside gradually. Wood records a case of glioma of the brain in the history of which he says: "He had been for some days absolutely comatose, passing his discharges involuntarily and was thought to be dying; a few hours later he walked to the clinic room in a distant part of the hospital."

As already observed, the cranium may be sensitive to pressure as elicited by a gentle stroke of the finger or percussion hammer, or even to pressure with the fingers. The latter I have noted in a number of cases; it corresponds to a circumscribed pachymeningitis with more or less osteitis and is generally indicative of a lesion accessible to the knife.

Migraine is sometimes a symptom of brain tumor; it comes on as a unilateral headache, with intervals of extreme variability accompanied by disturbances of the stomach, tinnitus aurium, considerable dilatation of the pupil of the affected side; in the interval there is apt to be quite an amount of headache, nonmigrainous in character.

Chief among the symptoms of brain tumor are those connected with the eye—in fact not at all infrequently the patient first learns of the existence of any head trouble upon consulting the oculist for disturbance of vision. Tumors located at the base of the brain or at the posterior end of the internal capsule or about the optic thalamus—all beyond the possibility of surgical treatment—give rise to most marked interference with sight, while the same is true if they affect the occipital lobes; the manifestations peculiar to tumor situated in the last named region, are such as to enable us to positively locate the disease. Disturbance of the cortical cells of the cuneus, for example, gives a blindness of the outer half of the retina of the same side and the inner half of the opposite side; but if there be homonymous hemianopia *with motor paralysis of only one eye*, according to Noyes, the location can not be determined.

"Nystagmus, unilateral or double, permanent or temporary, exhibiting itself with other convulsive or paralytic symptoms, indicates cephalic lesion. In general, this will be at the base or on the convexity behind the fissure of Sylvius (region of the angular gyrus). In the former case (when at the base) it will be complicated with paralysis of the motor nerves of the eye or of the optic nerve; in the latter case (when at the convexity) there may be epileptic attacks, hemiplegia, etc., but we can not always venture on an exact localization." (Robini.)

Mydriasis, moderate in degree, may be due to intracranial pressure acting as an irritant to the pupil-dilating center, according to Raehlman, though Leber claims that the mydriasis is sometimes a true paralysis.

Papillitis is frequently associated with brain tumor, generally with dominant infiltration (choked disc). Both optic nerves are commonly affected when the inflammation is due to intracranial growths, though cases of one-sided neuritis have been recorded in undoubted brain tumor; notably cases of Reich, Hughlings Jackson, Pooley, Parinaud and Gowers—in each of which the tumor was upon the side opposite to the papillitis; but usually monolateral papillitis is a condition dependent upon some local cause in the orbit, erysipelas, etc., while bilateral papillitis will nearly always be found to be due to a tumor in the brain when it can not be traced to injuries of the skull or meningitis—conditions easily recognizable under ordinary circumstances. Cerebellar tumors particularly, tend to the development of papillitis; and the tumor need not be larger than a small cherry to cause the ocular trouble—so say Reich, Edmunds and Anneske. It most often appears late in the disease; indeed most authorities regard its onset as an indication that death will close the patient's existence within a few weeks unless operation is resorted to, but Matthewson has recorded a remarkable case in which it persisted for three years. Choked disc, then, may be regarded as an almost unmistakable evidence of the existence of an intracranial neoplasm, though exactly how it is produced is still an undecided question. Gowers says: "Distension of the sheath may perhaps intensify the process otherwise set up, leading to retention or augmentation of fluid in the lymphatic spaces in the nerve fluid which may in some cases possess an irritative quality." In 1881, Leber suggested that the fluid coming down the sheath provokes the trouble by its chemically irritating properties, and Deutschmann in 1887 injected the bacillus tuberculosis into the cranial cavity of rabbits producing papillitis and vaginal distension, while with innocuous fluids no results followed; as a deduction he maintains that the trouble originates in transmission of pathogenic elements from the neoplasm and that intracranial pressure has little or nothing to do with its production—the latter clause being in entire accord with the belief of almost every prominent ophthalmologist. Picque advances the idea that the trouble is due to the accompanying meningitis, the inflammation being transmitted to the papillæ by continuity of tissue, the intervention of "germs" being unnecessary—a theory supported by the fact that papillitis does not appear until very late in the history of deep tumors, not until the meninges are involved.

Atrophy of the optic disc may also be due to tumor, but not more than one-fourth of the cases—says Noyes—originate in this cause, so its significance is not so great as choked disc. However, it should always be looked for in making a diagnosis.

Hemianopia is usually not a localizing symptom of tumor for reasons already stated; yet it is a valuable factor in the problem of determining whether or not a tumor is operable. I quote from Seguin: "Lateral hemianopia with hemiplegia (spastic after a few weeks), aphasia (if the right side be paralyzed), and little or no anesthesia is quite certainly due to superficial lesion, implicating the motor zone and the gyri lying at the extremity of the fissure of Sylvius, viz., the inferior parietal lobule, the supramarginal gyrus and the gyrus angularis. Lateral hemianopia without motor, or common sensory disorder, or any other accompanying symptoms, is due to a lesion of the cuneus only, or of it and the gray matter immediately surrounding it, on the mesial surface of the occipital lobe opposite the dark halffields. Lateral hemianopia with loss of power in onehalf of the body, especially if associated with impairment of the muscular sense, is dependent upon a lesion in the inferior parietal lobule and gyrus angularis with their subjacent white substance, penetrating deeply enough to sever or compress the optic fasciculus on its way posteriorly to the visual field." The existence of any one of the groups of symptoms

indicates surgical interference. There are many more symptoms of interest to the neurologist, but none, so far as I know, that can be of use to the surgeon, excepting a few which concern cerebellar tumors; these will be mentioned in the next lecture.

(To be continued.)

ORIGINAL ARTICLES

THE ARMY MEDICAL MUSEUM AND THE LIBRARY OF THE SURGEON-GENERAL'S OFFICE.

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The Army Medical Museum, which has now a world-wide reputation, had its beginning during the Civil War. Surgeon-General Hammond, in a circular published in May, 1862, announced the intention of establishing an Army Medical Museum, and requested medical officers to collect specimens of morbid anatomy, medical and surgical, which might be regarded as valuable, together with projectiles or foreign bodies removed and such other matters as might prove of interest in the study of military medicine and surgery. Later circulars gave more explicit instructions regarding the collections to be made; and in a short time thereafter an immense amount of material illustrative of gunshot fractures and the lesions of camp diseases was sent to Washington from the field and general hospitals throughout the country. The work of preparing, arranging and cataloguing these specimens was carried on actively under the superintendence of Surgeon J. H. Brinton, U. S. Volunteers who was the first curator; and in April, 1867, the museum was opened to the public in the Ford's Theater building in which two years prior to this, President Lincoln was assassinated. At the same time a small number of copies of an illustrated catalogue was printed for use in the museum and for exchange with other museums and scientific bodies. The entire number of specimens then catalogued was 8,542. At this time also the museum and library received official recognition from Congress by the authorization of certain expenditures in their behalf among the miscellaneous expenses of the Medical Department.

The value of a printed catalogue to a museum is very great, as it is by its means that the collection is made available to scientific students, the majority of whom can not personally examine the specimens, and by diffusing a knowledge of the contents of the museum it leads to voluntary contributions to the collection. A full catalogue of this museum is a want that has long been felt. Partial lists have been published at times, as in 1876 a check list of the preparations and objects in the section of human anatomy for use during the International Exhibition, and in 1880 a list of the anatomic specimens for distribution among army medical officers and anatomic students and correspondents. The Surgeon-General has on several occasions urged the publication of a catalogue; in 1873 and again in his annual reports for 1886, 1887 and 1888. His want of success on these occasions no doubt accounts for the fact that no effort has been made recently in this direction. It is unnecessary to speak of the practical utility of the museum in these columns, for medical men can easily appreciate this. To Army medical officers it affords a field of study indispensable to the acquirement of the fullest knowledge of the special duties required of them. The illustrations of military surgery and camp diseases contained in it have greatly promoted general professional knowledge on these subjects; and woodcuts of many of its specimens have found their way into works on military medicine and surgery. There is no doubt, however, that the educational value of the collection would be greatly enhanced by the publication of an illustrated catalogue. Much of the material for such a catalogue is already on hand.

As a knowledge of the existence and scope of the museum became diffused, many of the officers of the Army outside of those belonging to the medical department, and practitioners in civil life, sent contributions to it, so that the Surgeon-General was no longer able to speak of "the pardonable pride which he took in the reflection that this important collection had been accumulated through the unaided zeal and industry of the medical officers of the Army." Army officers sent specimens of natural history, stone implements and other objects of archæological interest, all valuable as objects of exchange with other museums, while civilian practitioners sent specimens more strictly pertaining to the province of the Army Medical Museum. Exchanges have been made with the Smithsonian Institution, the Agricultural Department, the Museum of the College of Physicians, Philadelphia, of the New York Hospital, the Peabody Museum at Cambridge, Mass., the Blackmore Museum in England, the Anatomical Collection at Oxford, England, etc. To the energy and ability of Drs. Woodward and Otis, both of whose too short lives were mainly devoted to the building up of the Army Medical Museum and to professional work associated therewith, the Army Medical Department and the medical profession owe the successful issue of an undertaking which is now a credit to the country.

The Army Medical Museum was housed in the old Ford's Theater for over twenty years. The building was utterly unsuited for this purpose, even had the whole of its space been available for the display of the specimens. As it was, the museum was confined to the third floor, lighted mainly by skylights, the library being packed two and three rows deep on the shelves of the floor below, while the Hospital Records of the Civil War, with the clerks at work on them, occupied the ground floor. The growth of the museum, and particularly of the library during these years manifested the inadequacy of their quarters. In time there came to be no room for even the storage of books and specimens, not to speak of facility of reference or advantageous display. Moreover, the danger from fire was considerable, although the best cere was taken by the officer in charge to prevent such a calamity. The building was closed in on three sides by inflammable tenements and sheds on property over which this officer had no control. Besides, the weak walls of the theater, which were cracked and markedly out of plumb on the east, suggested that in case of fire there would be an utter destruction as the walls would assuredly fall. A fire in 1875 in the adjoining buildings emphasized the danger to which the library and museum were exposed and recalled how the Smithsonian Institution suffered in 1865. The damage to the Patent Office in 1877 increased the anxiety for the safety of the collections in the Ford's Theater building so that in

1880 the President of the United States considered the subject of such importance as to embody a recommendation for a fireproof building in his message to Congress. He said:

"The collection of books, specimens, and records constituting the Army Medical Museum and Library are of national importance. The library now contains about fifty-one thousand five hundred (51,500) volumes and fifty-seven thousand (57,000) pamphlets relating to medicine, surgery and allied topics. The contents of the Army Medical Museum consist of twenty-two thousand (22,000) specimens, and are unique in the completeness with which both military surgery and the diseases of armies are illustrated. Their destruction would be an irreparable loss not only to the United States but to the world. There are filed in the Record and Pension Division over sixteen thousand (16,000) bound volumes of hospital records, together with a great quantity of papers, embracing the original records of the hospitals of our Armies during the Civil War. Aside from their historical value, these records are daily searched for evidence needed in the settlement of large numbers of pension and other claims, for the protection of the government against attempted frauds, as well as for the benefit of honest claimants. These valuable collections are now in a building which is peculiarly exposed to the danger of destruction by fire. It is therefore earnestly recommended that an appropriation be made for a new fireproof building, adequate for the present needs and reasonable future expansion of these valuable collections. Such a building should be absolutely fire-proof; no expenditure for mere architectural display is required. It is believed that a suitable structure can be erected at a cost not to exceed two hundred and fifty thousand dollars ($250,000)."

A bill authorizing the construction of a fire-proof building passed the Senate in 1883, and was favorably reported from the proper committee to the House of Representatives, but no final action was reached at that session. Ultimately, March 2, 1885, an appropriation of $200,000 was approved; but as the original plans were based on an estimate of $250,000 many changes had to be made involving a reduction in size and the omission of ornamentation. The site selected was in the Smithsonian grounds where they are traversed by Seventh Street, having as its neighbors on a line westward the National Museum, the Smithsonian Institution, the Agricultural Department and the Bureau of Engraving and Printing. The museum was opened to the public in its new quarters in February, 1888. On June 30, 1894, it contained 32,269 specimens; of which 12,249 were pathologic, 4,376 anatomic, 1,717 illustrative of comparative anatomy, 12,033 microscopic and 1,894 miscellaneous.

While the success of the museum was assured almost from the first by the inflow of specimens from the hospitals of the Civil War, the progress of the library was slow in its earlier years, and but for the unremitting care and able management of Dr. John S. Billings it would certainly have succumbed to some of the many accidents and harmful influences that are prone to assail the infancy of such undertakings.

The nucleus around which the library has been crystallized was the few books of reference and textbooks on medical subjects that had gradually accumulated in the rooms of the Surgeon-General's office. A catalogue published in 1865 contained the titles of only 1,800 volumes. As stated above, in 1867, certain expenditures were authorized for the library out of the appropriation for the miscellaneous expenditures of the Surgeon-General's Office. Since then, both the library and museum have met with kind consideration at the hands of the Appropriation Committee, the usual sum carried by the Army Appropriation Bill for the former being $10,000, for the latter $5,000. For the current year, however, the sum for the library was reduced to $8,000. One of the first special efforts of the librarian was to make the library as complete a storehouse of American medical literature as possible. To this end he collected and perfected the files of all the medical journals published in this country since 1798, making an index on cards of the subject titles of all the original articles found in them, for the convenience of those who desired to consult the literature of any special subject. The articles in current medical journals and volumes of transactions were indexed on reaching the library, and the work of completing a card index for all the volumes already accumulated was carried on as steadily and rapidly as was permitted by the clerical aid available for the purpose.

An alphabetical catalogue of authors was published in 1874, when the library contained about 25,000 bound volumes and 15,000 pamphlets. It was then the largest medical collection in this country. Its records show the friendly interest that was taken in its progress and work by physicians in all parts of the country, and testify that even then it succeeded in a most satisfactory way in meeting all the demands made upon it.

In 1887 the work of cataloguing the original papers in medical journals and transactions was completed for all that class of literature that the library then contained; and the classifying of the titles under the proper subject headings and combining them with the titles of books to form a complete index to the collection was also effected. During the previous year some copies of a specimen fasciculus of a proposed Index Catalogue were printed and distributed, in order to obtain the opinion of those competent to judge whether it was desirable that such a work should be published, and if so, to elicit criticisms and suggestions as to the form of catalogue that would be most acceptable and useful. The responses, consisting of letters, resolutions of societies and editorial and critical notices, were numerous and not only favorable to the general plan as proposed, but unanimous in the expression of the opinion that the whole work should be published as soon as possible, it being regarded as of the utmost value to medical writers and teachers not only of this country but of the world. Congress acted favorably on the proposition, and the result is that to-day the medical profession is enriched with a magnificent set of volumes of author and subject titles in a single alphabetical series which will shortly be completed by the issue of the last, the sixteenth volume. The first was issued in 1880, and every year since then, until last year, one volume was added to the set. The completed catalogue will contain about 170,000 author titles, the same number of subject titles of books, and about 525,000 subject titles of pamphlets.

When the first volume of the Index Catalogue was published the library contained 51,500 bound volumes and 57,000 pamphlets. Since then the number of bound volumes has been more than doubled and of pamphlets much more than trebled. The early volumes of the catalogue therefore show only one-half, or less than that, of the present wealth of the library. To remedy this, Congress has shown its appreciation of the work by authorizing the issue of a second alphabetical series, supplementary to the first, which will probably be completed in five volumes similar in size and style to those already issued. Meanwhile, as supplementary to the catalogue, the

sixteen volumes of the "Index Medicus," edited by Dr. Billings and his learned collaborator, Dr. Robert Fletcher, have been of the greatest value to the literary workers of the medical profession. It is greatly to be regretted that this monthly exponent of the progress of medical science may possibly die for want of financial support. Its condition has recently been noticed extensively in the medical journals. As its continuance is of importance to the whole medical profession, the present writer does not see why it should not be in order for the AMERICAN MEDICAL ASSOCIATION to come to its rescue and continue its publication from the office of the JOURNAL. In this way any financial loss would be generally distributed among those directly or indirectly benefited.

The Index Catalogue has given a wonderful impetus to medical literature and education in this country, as it has placed the valuable stores of the library within easy reach of those who are qualified to make use of them. Formerly, when any one desired to become acquainted wiih the knowledge already acquired by the profession on some special subject, he frequently gave up the effort at the outset as he appreciated the difficulties and oftentimes the impossibility of gathering together the various articles already published on the subject. The bibliography appended to a journal article was often to students of the subject the most valuable part of a contribution. Now, all this is changed. The student has merely to turn to the Index Catalogue and the desired literature is before him, with many hints to guide him in the selection of the volumes that bear especially on his inquiry. The volumes themselves may be obtained by applying through the custodians of public libraries; and in some cases books that can easily be replaced have been sent direct to the applicant on the deposit of a sum sufficient to cover their market value.

It has, however, been found needful recently to impose some restrictions on the loaning of books, particularly of standard authorities and volumes of journals that are in constant demand. As the number of readers in the library has increased, it has more frequently happened that requests for certain volumes could not be complied with on account of their absence on loan. The interests of those who come to the library to prosecute their studies should not be sacrificed for the sake of those who ask the library to come to them. To be able to accommodate both parties, Dr. Billings is endeavoring to procure duplicates of those standard works, journals and transactions that are in general request. Moreover, the wear and tear of years of use is beginning to tell on many of these and to render their duplication needful. Contributions of the character indicated would therefore be of much value; and the writer of these lines trusts that those who have read thus far will make a note of this and aid the library in this desirable extension of its field of usefulness. Its friends need have no hesitancy in duplicating works already on hand, as the spare copies can always be made of use in effecting exchanges.

It is time, however, to say a few words concerning the present quarters of the library and museum. The building is of red pressed brick, E-shaped, and severely simple in style. The main building fronts on B Street, the wings project into the mall. This is a mistake, as all the other public buildings in the vicinity front on the park. Hereafter when it becomes needful to enlarge the establishment this mistake will no doubt be rectified. The main building is 125x55 feet, the wings each 60x131 feet. Under both is a basement eleven feet high which affords magnificent storage rooms.

The ground floor is traversed by a central corridor, clean, white, smooth and unadorned, on either side of which are doors leading into rooms of various sizes. On the western or left side of the entrance are rooms occupied by clerks of the Record and Pension Office of the War Department. On the right are the lecture rooms and sanitary laboratory of the Army Medical School, the work room of the pathologist and the chemic laboratory where guard is kept over the purity and strength of the medical supplies furnished to the Department. One of the rooms on this floor is given up to speeimens of syphilitic disease unsuited for display in a museum open to all comers; another has been fitted up recently with various forms of stretchers, wheeled litters, cacolets, travois and other means of carrying sick or wounded men. Opposite the entrance a wide stairway of iron, carpeted with thin rubber, makes a semi-circular sweep to the second floor. The corridor of the main building on this floor opens on the west into the museum hall and on the east into the library, the rooms on either side being used by the clerical force of the latter. One large room adjoining the library is fitted up as a reading room for those making personal use of the books, and has on its shelves such works as are in everyday request. The floors throughout the building are of brick between rolled iron sheeting.

The rooms on the third floor are occupied by those connected with the work of the museum. The bacteriologic laboratory on this floor is well outfitted and has an excellent northern exposure for microscopic work. Such of the attics as are not required for photographic work are used as storerooms.

The whole of the eastern wing from the second floor level to the roof is occupied by the library. This fine hall, thirty-one feet to the eaves and forty-seven feet to the ridge, is lighted by high windows and skylights in the risers of the ridge. The south end of the hall near the entrance from the corridor presents a large floor space which supports only a few desks, chairs, revolving book stands and large tables for the convenience of visitors in consulting atlases and other large works of reference. On three sides the whiteness of the walls between the window spaces is relieved by large oil paintings of some former Surgeon-General of the Army,—Tilton, Lovell, Lawson, Finley, Barnes and Crane, with portraits also of Bichat, John Hunter, Morton and Physick, and many photographs and engravings. On the fourth, the north side, this clear space is closed in by what looks at first sight like a solid wall of books in red leather bindings. On closer inspection the wall becomes resolved into a three-storied framework of perforated iron, each story seven and a half feet high and extending along the length of the wing to its northern wall. Narrow iron stairways permit of communication between the stories and narrow corridors between the sections of the structure, each section being fitted with adjustable shelves of hard oak, filled with books or with file cases containing pamphlets. The estimated capacity of the library is 179,000 volumes. On June 30 of last year there were supported on its shelves 114,567 bound volumes and 183,778 unbound pamphlets and papers. The former

comprised 72,090 medical works, 33,297 volumes of medical journals, 4,913 of transactions of societies, 1,663 of theses and 2,604 of pamphlets. The latter consisted of 56,218 theses and 127,560 pamphlets. The binding of these into volumes depends on the means available. In 1893, 630 pamphlets were bound into 128 volumes and last year 2,802 into 343 volumes.

These books are all devoted to medicine and its collateral branches. No purchase is made for the library of books belonging to general or miscellaneous literature. It has all the costly illustrated medical works and anatomic atlases. It has also a valuable collection of the medical classics and a number of the rarities and curios of medical literature; but the aim has ever been to make it a storehouse of the medical thought of the present day rather than a collection of works that are of interest only from a historical point of view. The library is by far the largest of its kind in the world. This is gratifying to us; but we can take a much greater pride in the thought that of all such libraries it is the one which is most available for and most used in the current work of medical progress.

The museum hall in the west wing has a floor and cubic space equal to that of the library, but the two halls differ widely in general appearance. The contents of the museum are disposed in open order as contrasted with the compact shelves, tiers and sections of the library. The specimens are arranged in glass show cases, each about twelve or thirteen feet long, two and one-half feet wide, and eight feet high, which project into the body of the hall from the side walls, but with ample space for light and movement between adjacent cases. On the third floor level is a gallery which projects beyond the ends of the show cases below, but does not interfere with the light from the skylights in the ridge. The gallery is reached by a stairway at each end of the hall, as well as by a door opening from the corridor of the third floor of the main building. Some flags are draped from the face of the gallery, conspicuous among which is the hospital flag of all the armed nations of the world, the Red Cross of the Geneva Treaty.

The first thing the visitor must do on entering this hall is to record his name on the visitor's book. In 1893, 85,000 persons did this; last year 50,000. Most of these were merely sightseers; but the interested and appreciative student is always among them.

One would suppose that when over 32,000 specimens are the subject of inspection and report, it would be difficult to select the materials for a short journal article concerning them; but a very brief examination of the hall shows that the system adopted in the display enables the observer not only to appreciate the museum in its entirety, but to select the case in which he will probably find some particular object of his search.

The center of the floor space has along its length a number of flat-topped glass cases in which are displayed surgical instruments of all kinds, but in particular those intended for military service. Various miscellaneous objects are also on exhibit here. The series of microscopes is one of much interest as showing the evolution of the instrument from its earliest days. Models of military hospitals, hospital trains and steamboats bring to mind the busy days of the Civil War; while near by are tube cultures of the various bacteria the study of which has had such a wonderful influence on the progress of surgery since those times of active service. A fine series of urinary calculi, models of the common and harmless and of the poisonous mushrooms, and life-size models of the anatomy of the horse are prominent among the objects displayed, as are also a collection of medical medals and a series of delicate longitudinal and antero-posterior sections of the human embryo prepared by Dr. Wm. M. Gray, the microscopist of the museum.

It is, however, in the display cases projecting from the side walls that the systematic methods of the museum are seen to the best advantage. In illustrating any part or organ of the human body its normal development is shown first and then the abnormal deviations that are occasionally found, with specimens from the domain of comparative anatomy that throw light on the deviations. These are followed by illustrations of its anatomy and physiology, and lastly of the diseases and injuries to which it is specially subject. The cases are numbered in arithmetical sequence. Case No. 1 and those immediately following it contain specimens illustrative of the organism as a whole, beginning with the formation of the ovule in the ovary, following its progress to the formation of the embryo in the uterus, and thereafter showing the gradual development of the latter, with many side lights on the subject from comparative embryology. The abnormal developments are then shown, such as hydrocephalus, spina bifida, extroversion of organs and various monstrosities. Next come the anatomy and physiology of the perfected system, and then illustrations of general morbid conditions such as tuberculosis, cancer, septicemia, syphilis, alcoholism, fevers, etc., and lastly general injuries, as from crushing, explosions, and exposure to heat and cold. The various anatomic regions and organs are then taken up, one after the other, and each has its medical connections illustrated by specimens showing its development. abnormalities, anatomy, physiology, morbid conditions and injuries.

In the gallery is a series of show cases, like those below, in which are exhibited the missiles, weapons, fractures, excisions, amputations and other specimens of the war. In fact, the museum of the old Ford's Theater building may here be recognized, while that on the floor of the hall is relatively a new institution. The gallery contains also many specimens of comparative anatomy, a magnificent collection of skeletons and crania, some frozen sections of the brain and dissections of other parts of the body preserved in alcohol, and many beautiful wax models of diseases of the skin.

It is, however, so difficult to convey a well defined idea of the wealth of the museum by mere written words that this article had better be closed with the suggestion that the members of the ASSOCIATION take advantage of the meeting in Baltimore to come to Washington and inspect for themselves.

THE forty-sixth annual session of the AMERICAN MEDICAL ASSOCIATION will be held in Baltimore, Md., on Tuesday, Wednesday, Thursday and Friday, May 7, 8, 9, and 10, commencing on Tuesday, at 10 A.M.

Blank Applications for membership in the ASSOCIATION at the JOURNAL office.

THE MEDICAL TREATMENT OF CANCER OF THE LARYNX.

Read by invitation before the Philadelphia Chapter of the Alumni Association of the Jefferson Medical College, March 12, 1895.

BY E. L. VANSANT, M.D.

ADJUNCT PROFESSOR OF DISEASES OF THE THROAT AND NOSE IN THE PHILADELPHIA POLYCLINIC; SURGEON TO THE THROAT, NOSE AND EAR DEPARTMENT OF THE HOWARD HOSPITAL; PHYSICIAN TO THE PHILADELPHIA HOSPITAL.

The medical treatment of carcinoma of the larynx, with our present knowledge is necessarily a palliative one. Still, efforts to find some drug or method of treatment that would retard or cure the malignant growth have been unceasing. Among the many remedies that have been so used may be mentioned arsenic, iodoform, ergot, mercury, sulphide of calcium, tincture of thuja occidentalis (arbor vitæ), chian, turpentine and condurango. Injections of pyoktanin or the anilin colors and, more recently, a 2 per cent. solution of carmine, dissolved in a 3 per cent. solution of soda.. None of these have, however, stood the test of time and, although some of them do much good in improving the systemic condition and alleviating some of the symptoms, still no purely medicinal treatment has, as yet, been proved to be of curative value.

A plan of treatment that perhaps deserves fuller mention is the comparatively recent one with the toxins of erysipelas, either used alone or in combination with the toxins derived from the bacillus prodigiosus.

This treatment, which originated from clinical observations of the antagonistic action of accidentally acquired erysipelas upon malignant growths, lupus and syphilitic lesions, has been considerably experimented with, and a number of favorable results in cases of inoperable malignant growths have been reported. In the early trials of this treatment, the plan adopted was to excite an artificial erysipelas in the vicinity of the growth by making inoculations of the erysipelas streptococci. It was found, however, very difficult to produce an erysipelas by such inoculations, nor was the danger attending an attack of erysipelas a slight one. I need hardly call your attention to the fact that erysipelas of the larynx is so grave a disease, that for this form of cancer at least, such treatment would be reprehensible.

Further experimentation developed the fact that injection of the toxins derived from bouillon cultures gave quite as good results as inoculation with the living cultures, and further, that the activity of such toxins was greatly augmented by adding toxins derived from cultures of the bacillus prodigiosus.

I will not dwell upon the laboratory methods by which such toxins are obtained. At first the germs were developed in separate bouillon cultures, then filtered, a small quantity of thymol crystals being added to the filtrate, which was kept in a cool dark place until used. Later the streptococci were allowed to grow for ten days, then the bacillus prodigiosus added, and allowed to develop two weeks longer; the filtrate from this mixed culture being used. Still later, the cultures instead of being filtered were subjected to a sufficiently high temperature (58 degrees C.) to kill the germs, though not high enough to produce much chemic change in the toxalbumins. The injection of the products from this last-mentioned method are said to have a better effect than when the cultures were filtered.

Treatment by these double toxins is now carried out by the hypodermic method. In a recently published case,[1] 15 minims of a solution were injected every other day, and the dose gradually increased to 40 minims. The injections may be made into the arm, leg or buttocks, and produce local redness, swelling and pain which may persist from twelve to twenty-four, or even thirty-six hours. The temperature after each injection usually rises, and may reach 103 to 105 degrees F. Nausea, chill and vomiting at times follow the injections.

This treatment has now been applied to a number of cases, and the reported results in some of them have been marvelous, the injections being followed by rapid breaking down and disappearance of the humors, and, although a large per cent. of even the greatly improved cases have recurred, still a few seem to have been permanently benefited.

I have not been able to find any record of carcinoma of the larynx treated by this method, but several cases of sarcoma involving the tonsils, palate and part of the larynx have been reported as successfully so treated, the growth largely disappearing, and the general condition of the patient greatly improved.

For much of our recent information, and for most of the experimentation with this treatment in this country, we are indebted to Dr. William B. Coley, of New York, who has formulated the following conclusions in regard to it:[2]

1. The curative action of erysipelas upon malignant tumors is an established fact.

2. This action is much more powerful in sarcoma than carcinoma.

3. This action is chiefly due to the soluble toxins of the erysipelas streptococci, which may be isolated and used with safety and accuracy.

4. This action is greatly increased by the addition of the toxins of bacillus prodigiosus.

5. The toxins, to be of value, should come from virulent cultures and should be freshly prepared.

6. The results obtained from the use of the toxins are so nearly, if not quite, equal to those obtained from an attack of erysipelas that inoculation should rarely be resorted to.

In spite of the very favorable opinion of the curative action of erysipelas upon malignant tumors, expressed by Dr. Coley, it is my conviction that, as yet, the results of the erysipelas treatment are not sufficiently successful to warrant its preference in laryngeal cancer, over early and thorough surgical procedure, and that at present its use should be restricted to cases that may be termed inoperable.

The medical treatment of laryngeal cancer being then largely a palliative and symptomatic one, we will consider the treatment of the different symptoms, and when we reflect that so many of the cases when seen by us are inoperable, and that a large per cent. recur after operation, it will be seen that such symptomatic treatment is of the greatest importance. By it we may, at least, hope to alleviate the patient's suffering and prolong his life.

For the purpose of better considering the medical treatment, I will divide the cases of cancer of the larynx into two classes or groups: The first class comprises those cases beginning at some point outside of the larynx proper, it may be the tonsils, base of tongue, pharynx, esophagus, or even the thyroid

[1] New York Medical Record, No. XLVI, 1894.

[2] The Journal of Laryngology, Rhinology and Otology, vol. IX, No. 1, page 51.

gland, and then later extending into and involving the larynx; such cases are termed extrinsic or pharyngo-laryngeal. The second class will comprise those that begin within the larynx itself and are termed intrinsic or endo-laryngeal.

In the first class, the pharyngo-laryngeal, painful and difficult deglutition, slobbering of saliva, and pain, which also radiates to the ear, are apt to be the earliest and most urgent symptoms; while dyspnea, loss of voice, cough, etc., may not be present until late in the course of the disease.

In the second class, the endo-laryngeal, dyspnea, dysphonia and cough are apt to be the first symptoms, and dysphagia may not occur until the growth extends to the surrounding parts.

As regards the treatment of dysphagia, if ulceration be present, treatment addressed to the healing of such ulcers is indicated. This will consist of careful cleansing of their surfaces by means of antiseptic washes or by swabs moistened with disinfecting and cleansing solutions, such as hydrogen dioxid, weak solutions of carbolic acid, permanganate of potash, etc. After thorough cleansing, the surface of the ulcers may be touched with nitrate of silver in solution, or dusted with iodoform, calomel or other detergent powders. Recently I have had good results from the use of acetanilid; with it not only have the ulcerated surfaces been reduced in size, but considerable relief from pain has been obtained. Cleansing the throat with warm alkalin sprays or washes, and applying solutions of cocain, by means of sprays or swabs some five to ten minutes before eating, will often so relieve the dysphagia, that the patient may enjoy a fair meal. We begin preferably with a weak solution of the cocain, say 2 per cent. to 4 per cent., and increase the strength of the solution as found necessary; frequently we must resort to solutions of 10 per cent. or even stronger in order to obtain the desired local anesthetic effect.

Insufflation of morphin, or morphin mixed with the subnitrate of bismuth, powdered starch or other such excipients will give some relief from pain and permit of swallowing. Dusting the throat with powdered formanilid or swabbing with a 10 per cent. to 20 per cent. solution of the same is said to produce a considerable local anesthesia which is quite lasting.[3] At times it will found necessary to resort to rectal feeding, the patient not swallowing anything but the necessary fluid. Rest thus given to the throat for a few days, especially when associated with appropriate local treatment, may greatly relieve the dysphagia.

A procedure that I have frequently advised, and which is usually attended with marked success, is for the patient to place a glass of milk or broth on the floor, or upon a low stool, and then lying prone upon a lounge to suck the fluid up through a tube. At times the patient has found that by sitting in a chair and placing the glass upon the seat of a chair in front of him, he could by leaning forward swallow the fluid through a tube very comfortably. With the appearance of dysphagia the patient should confine his diet to semi-solid and fluid foods. Efforts to continue the deglutition of solids will lead to increase of the difficulty, and hasten the tending to the inflammation and ulceration. Food should be predigested by the addition of peptonizing powders. Peptonized milk is especially useful. Raw eggs can usually be swallowed even when the dysphagia is severe. Sucking of ice pellets is grateful to the patient. The use of the esophageal tube for feeding is attended with the danger of accidentally perforating the esophagus, and if resorted to, should be used with great care. In cases involving chiefly the tonsils and base of tongue, feeding through the nose may be practiced, peptonized fluids being passed to the back of the pharynx through tubes introduced through the nostrils.

[3] Medico-Medizinische Presse, 1898. No. 10.

Dyspnea as a symptom is usually an early one, particularly so in the endo-laryngeal cases, and even in the pharyngo-laryngeal group may be noticed before dysphagia. For the treatment of this symptom, rest will be found to be of great value, for even comparatively slight exertion greatly increases the embarrassment to the breathing. At times the dyspnea is associated with and chiefly due to the accompanying edema of the glottis. Here applications of a 20 per cent. oily solution of menthol, inhalations of steam vapor medicated with benzoin, chloroform, menthol, etc., may be used. Scarification of the edematous parts with the laryngeal lancet should not be delayed, but should be performed early; such scarification may be followed by endo-laryngeal application of menthol solutions, inhalation of medicated vapors, the continuous use of the cold coil around the neck, and the administration of pilocarpin as necessary.

When the dyspnea is due to mechanical obstruction caused by the growth; preliminary to the medical treatment, removal of part of the growth may give marked relief both to voice and respiration. Tracheotomy, even, must at times be resorted to. If the pressure is against the trachea, the position of the patient may have an influence upon the dyspnea; the patient will soon find in which position he is the most comfortable, and should be encouraged to remain so. Strychnin seems to give relief in certain cases.

Aphonia must be treated upon the same plan as the dyspnea. Hoarseness is usually a very early symptom, and the patient should give the vocal organs as much rest as possible. Sedative inhalations can be used here with advantage. The following formula can be recommended:

℞. Tinct. benzoini compositæ.
Tinct. opii camphoratæ . . . . . aa f℥i.
Chloroformi . . . . . ♏ xx.
M. Sig.: Add a teaspoonful to a pint of water at 150 degrees F. and inhale vapor.

The medicated hot water is to be placed in a pitcher or bowl inclosed with a funnel-shaped paper or a folded towel. Vinegar and paregoric, a dessert-spoonful to a tablespoonful of the former with one-half teaspoonful of the latter to a pint of water at 140 to 160 degrees F. and inhale vapor.

℞. Acid acetici . . . . . ♏ xxx to xlv.
Tr. opii camph . . . . . ♏ xv to xxx.
Mix and add to a pint of water at 150 degrees and inhale.

Where obtainable a steam atomizer can be used to make these medicated vapors, or the medicine may be placed upon a sponge in a bottle which is placed in hot water. Nebulized balsams can also be recommended. Strychnin is also valuable in dyspnea and may be used hypodermically.

Pain which is a most constant symptom is usually of an acute, lancinating character, and is often reflected to the ears. For its relief, applications to the larynx of morphin, cocain, iodoform, acetanilid, etc., may be used. Warmth applied to the neck

gives some relief, as do ointments and liniments containing belladonna, chloroform and aconite applied externally. Hot instillations into the ear of pure water, or warmed solutions of cocain, morphin, atropin, etc., dropped into the ear, aided by hot moist or dry external applications give relief to the severe earache.

Cough may not be so prominent a symptom as to demand special treatment. The sedative inhalations of benzoin (compound tincture) associated with laudanum, chloroform or conium or the local applications of morphin, and cocain usually give relief. If necessary, morphin and codein may be given internally. For the excessive saliva, antiseptic and astringent mouth-washes and gargles, or the administration of a small amount of atropin may be recommended.

The general symptoms associated with cancer of the larynx are those usually found in malignant cachexia. Rest, abundant feeding and fresh air are needed. Constipation being the usual condition must be relieved by enemata or mild cathartics. Avoidance of tobacco and ardent spirits is important, not only for the general condition but also on account of their local irritating effect. The same may be said of impure or dust-laden air. The patient should be in a pure fresh atmosphere as much as possible, and if exposed to dust or impure air should breathe through a respirator. Arsenic, cod-liver oil, iron and tonics are indicated. The mild Zittman's decoction of sarsaparilla has been recommended. In the later stages, anodynes give great comfort to the patient; the hypodermic use of morphin, or morphin with atropin is usually the best method to administer them.

A treatment that is more of a surgical nature, but which should only be intrusted to the skilled hand of the laryngologist, is the attempt to destroy the growth, or relieve urgent symptoms by intra-laryngeal operation, and more particularly by the use of the electric-cautery. When the growth is quite local, and there is no infiltration of the adjoining lymphatics, good results may be expected from a thorough destruction of the growth and the surrounding tissue by intra-laryngeal methods; such destruction may be best performed with the electro-cautery, or the use of the cautery after the removal of the growth with the laryngeal knife or forceps.

In advanced cases with much infiltration of the surrounding parts, intra-laryngeal removal of parts of the growth may prolong life and lessen the severity of the symptoms quite as much as can be expected from extra-laryngeal operations in such cases.

Following such intra-laryngeal destruction of small local growths, or after the graver operations, medical treatment upon the lines already laid down must be continued for some time in order to obtain good final results.

THE EARLY SYMPTOMS, DIAGNOSIS AND DIFFERENTIAL DIAGNOSIS OF CARCINOMA OF THE LARYNX.

Read by invitation before the Philadelphia Chapter of the Alumni Association of the Jefferson Medical College at a meeting held March 12, 1895.

BY WILLIAM S. JONES, M.D.

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There is nothing in the development ot laryngeal cancer which gives rise to symptoms differing in any notable way from those which characterize the onset of a benign growth. Impairment of the voice is the first symptom which manifests itself, and even this may be absent for a considerable period, especially in those cases that begin in the ventricular band. There, then, as the infiltration increases, the voice becomes weaker until there is complete aphonia.

Probably the next symptom to develop is dyspnea. Particularly is this so, if the case is entirely intrinsic, while in the case of an extrinsic cancer, dysphagia may develop owing to the mechanical obstruction in the esophagus. As a direct result of this condition, salivation becomes a prominent symptom in a large proportion of the cases.

As regards the involvement of the lymphatic glands of the neck in cases of intrinsic cancer; as long as the growth is confined to the larynx proper, there is no glandular enlargement. This is almost without an exception. While in extrinsic growths or those which involve the epiglottis, the ary-epiglottic folds or the arytenoids, glandular involvement is an early symptom at about four or six months. Then about this time new symptoms develop. The most important is ulceration and hemorrhage.

Ulceration is due, in part, to attrition to which the growth is subject in the functional movements of the parts, but more undoubtedly to the increased cell proliferation, which occurs with its increased size. Before ulceration sets in the secretions while increased, are comparatively normal, and may give rise to a slight irritation and perhaps cough. After ulceration sets in the secretions become somewhat excessive, and consist of necrotic tissue and pus cells. At the same time a characteristic odor of cancerous ulceration becomes apparent in the patient's breath. This is decidedly fetid, and is usually recognized by a peculiar musty smell. Sometimes the first suspicion of cancer may be excited by this odor. These are all of the early symptoms of a malignant growth of the larynx, excepting pain which is not a constant symptom, and in some cases it is actually absent. It is more prominent in extrinsic cancer than in intrinsic. It is sharp in character, and usually radiates toward the ear.

In diagnosticating a case you have to consider heredity, sex and age. Heredity exercises the same influence in laryngeal cancer as in any other region of the body. It occurs principally in the later years of life; and is much more frequent in the male than the female.

On laryngoscopic examination there is nothing in the general appearance of carcinoma in its earlier stages which renders it possible to make an absolute definite diagnosis; this is the time when the patient first complains of an impairment of the voice. Impaired motion of non-paralytic character leads to a suspicion of malignant infiltration, especially if any evidence of infiltration is apparent. A few months from this time the laryngoscope will show to the trained eye a thickened mass; irregularly outlined, soft in consistency, in color about the same as the healthy portion of the larynx, and with a broad base. As the case advances from this stage the diagnosis becomes easy. The voice becomes gradually aphonic, owing to the increased tumefaction, for it is to be borne in mind that the disease consists in a cell infiltration which burrows broadly and deeply into the surrounding parts. The growth gradually enlarging, encroaches on the lumen of the larynx. The progressive development of all symptoms, together with the lancinating pains shooting toward the ear, and

the cachexia with the glandular enlargement in the very late stages, should enable one to recognize the true character of the disease.

In the differential diagnosis, there are three affections of the larynx that produce impairment of the voice which can be distinguished from cancer without the use of the laryngoscope, viz., acute and chronic laryngitis and nervous aphonia. Acute laryngitis, by the sudden loss of the voice. The chronic, by the difference in the tone. In some portions of the day the voice is almost normal, while at another time in the same day, the voice is aphonic. This will also occur in some benign growth such as polypus, which has a pedicle. This growing above the cords, while remaining in that position causes little or no hoarseness; but occasionally it will drop down between the true cords and while there causes complete aphonia.

In hysterical aphonia the voice is lost, and the patient simply communicates in a whisper; there is no break in the tone. In all other cases of impairment of the voice, you will have to depend upon inspection of the larynx. By the laryngoscope all forms of paresis of the larynx can be eliminated, for in these cases there is no tumefaction, the aphonia being due to a fixed position of one or both true cords. By the same means all benign growths can be readily distinguished; their color, shape and general outlines differ from a malignant growth; also a benign growth springs from the surface or mucous membrane, and does not cause an increase in the size of the part from which it grows, or cause surrounding inflammation or infiltration. This leaves two affections yet to consider, and are the two from which it is difficult to make a diagnosis. These are tuberculosis and syphilis of the larynx. Tuberculosis occurring the most frequently we will consider first.

The first symptom we have is an impairment of the voice, cough, with increasing symptoms as the case advances. The first manifestation in the larynx is unilateral. The most frequent site of primary invasion is upon the arytenoid cartilage or commissure; the next, ary-epiglottic fold and epiglottis. A moderate amount of tubercular infiltration seems to cause a certain amount of tumefaction, which interferes with circulation, producing a moderate amount of edema with a dull gray color, and profuse secretions. When existing, there are two positive conditions in tubercular laryngitis that can not be mistaken for any other affection—the turban-shaped epiglottis and the club or pyriform arytenoids—these conditions are not caused by any other affection, but unfortunately they are frequently absent. The ulceration of tuberculosis is not a deep ulcer, has a ragged uneven edge—worm-eaten as it were—difficult to detect the outlines; hemorrhage unusual; the whole larynx becomes anemic.

The larynx may be invaded by any form of syphilis, from the primary lesion to the deep ulcer of the later stages. The usual affection is the third stage, and of that we will speak. Impairment of the voice is the first symptom; pain in this affection depends on the location of the lesion. If the soft parts only are affected the pain is not marked. If the epiglottis or posterior portion of the arytenoids is the seat of lesion, the pain is great on swallowing.

In the superficial ulcer of syphilis we have a distinctly yellow purulent discharge, a slightly rounded elevation without swelling. In the deep ulceration, we have all of the features of the superficial ulcer exaggerated, with its sharply cut edge, a marked injected areola surrounding it, and a profuse discharge of pus and necrotic tissue.

When a gummy tumor forms in the larynx, whether single or multiple, we are in doubt as regards the diagnosis. This presents itself in the form of a smooth, symmetrical, rounded tumefaction, which is ordinarily covered with healthy mucous membrane; it appears somewhat suddenly, and when it has attained its full size remains stationary unless ulceration occurs. This may occur in any portion of the larynx and varies in regard to size. The rapidity of the development of the growth, together with the subjective symptoms and the clinical history should give rise to a suspicion of syphilis, but by inspection of the larynx we may not be able to make a definite diagnosis. The administration of iodid of potassium will, in a few days, determine whether we have a gummy tumor to deal with. This is a test that all laryngologists will often be compelled to resort to before a decided opinion is given.

In summing up, we have as distinguishing points, the age of the patient, tubercle occurring early and cancer late in life. In the very large majority of instances, a tubercular process in the larynx succeeds or accompanies a similar process in the lungs.

Heredity exercises the same influence in laryngeal cancer as in any other region of the body, and on inspection we have in lupus the irregular contour, highly injected membrane but no ulceration, no secretion of pus and no exfoliation of necrotic tissue.

In sarcoma, we have a distinct tumor with, perhaps, an eroded surface, but no distinct ulcerated surface with pus secretions.

In carcinoma, we have a hard nodular tumor, with a ragged ulceration, the edges of which are not sharp cut, a tendency to slight hemorrhage and no well-marked areola.

CHRONIC GASTRITIS AND ITS TREATMENT.

Read before the Louisville Academy of Medicine, April 1, 1895.

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We have to-night for consideration "one of the best nourished and most widely prevalent diseases in the world." The subject is too large to review in all its details, in a paper that would interest the members of this society, and it will only be my aim to present a synopsis, hoping that the discussion, by those interested, will bring out the most salient points. This subject could scarcely be introduced without some reference to the abuse of the terms, dyspepsia and indigestion, by the medical profession in general. We who pretend to be precise in our technical phrases would be highly amused at our antiquated brother who talks of "lung fever" and "the dropsy" or the "weed in the breast," to his reverential hearers with all the wisdom of a "Sir Oracle." Yet we precise men walk into the sick chamber, feel the pulse, look at the tongue, get the subjective symptoms and with the most profound gravity answer the patient's query: "Oh, you have a case of indigestion," and prescribe pepsin or pancreatin or such. How horrified we "higher standard of medical education" men would be to hear our professional brother tell the mother, in answer to the question as to what was the

trouble with her child, say, "O, he's sick," and yet this response would have just as much meaning and be just as concise in its application in this instance as the term indigestion applied to some disease of the gastro-intestinal tract. Dyspepsia and indigestion are not diseases but symptoms of disease.

We only refer to such methods in order to arouse the interest of the profession in this large field of special work, hoping that they may either acquaint themselves with it properly or place it in the hands of those who are capable of diagnosticating this large variety of diseases in a scientific manner.

Etiology.—The causes of chronic gastritis are very numerous. It may result from the acute and subacute forms when they are frequently repeated. Irritants act more readily when the mucous membrane has been altered by changes in the circulation or the condition of the blood, the mucous membrane thus being rendered more sensitive than it is normally. These changes in the circulation may be produced by all processes which lead to venous congestion of the stomach; such as affections of the liver, spleen, heart and lungs. Tuberculosis, also of the kidney and uterus.

Chronic gastritis may be caused also by direct local irritation as a consequence of cicatrices and neoplasms or irritating substances which are brought in contact for a long time with the gastric mucous membrane as large, half-digested and insufficiently insalivated morsels of food, or from putrified material in the mouth, due to carious teeth or inflammation of the gums, or the muco-purulent matter from pharynges being swallowed. To this category also belong tobacco juice, concentrated alcoholic beverages, condiments; also toxic substances, like trichinæ and larvæ. Then there are certain causative elements which circulate in the blood and are excreted in the stomach; for example urea and the products of intestinal putrefaction. Of the above etiologic factors the most important are those irritating substances taken into the stomach.

Pathology.—The mucous membrane has a yellowish-gray or slate-gray color, it is usually thickened and covered with a delicate layer of mucus. The portion of the stomach usually involved is the pylorus, but may be the entire mucous membrane. The submucosa and muscularis may also be thickened and the latter especially at the pylorus may cause hypertrophy with consecutive stenosis. The minute anatomy of the process is that of a parenchymatous and interstitial inflammation. The glandular cells are in part destroyed, partly granular and partly shriveled. The superficial layer of the epithelium of the mucosa is loosened and is sometimes found in the wash water after lavage.

As the disease advances it finally causes retrogressive changes in nutrition, which are at first manifested in a progressive fatty degeneration of the glandular cells, and which finally cause complete atrophy of the mucous membrane, a point emphasized by Lewy, which must finally lead to a total destruction of the secreting parenchyma with all its consequences. The process progresses from above downward, and first obliterates the orifices of the ducts. The stomach as a whole is enlarged; its walls appearing thinned.

Another form of anatomic change is characterized by a marked activity of the interstitial connective tissue and leads to its hypertrophic proliferation, which proceeds from the base of the glands upward toward the lumen. Finally, the parenchymatous cells having been deprived of their nutrition, undergo atrophy. Here the organ is not enlarged *in toto*, but at times may be small and cirrhotic.

Another change arises from the villous outgrowths from between the small depressions in the gastric mucous membrane; this gives rise to the polypoid outgrowths from it, usually the size of a milium to a pea, and arranged alongside of one another in large numbers.

Clinical History.—Chronic gastritis presents itself in two clinical forms which are easily differentiated; chronic simple gastritis and chronic mucous gastritis. The differentiation really depends on the results of the chemic examination of the stomach contents. The patient usually complains of a dry, pasty or salty taste which is often communicated to the food during mastication. The tongue is usually coated at the base, where the reddened, swollen papillæ project above, while the edges bear the impression of the teeth. The lips are usually dry and chapped. Belching is very frequent; the gas being either odorless or having an effusive, sour smell and disagreeably rancid taste. It is frequently accompanied by the regurgitation of the gastric contents, having a sour and disagreeable taste; these regurgitated masses often imparting a burning and scratching sensation along the esophagus. When this is limited to the lower portion of the esophagus it is termed cardialgia.

When these sour regurgitations occur it is important to distinguish sharply between those due to the products of fermentation—namely, acetic, fatty and lactic acid, and such as owe their taste to an over secretion of hydrochloric acid, the former condition indicating chronic gastritis and the latter being classed with the gastric neuroses.

Vomiting is an irregular occurrence. I have noticed numerous writers in periodical literature mentioning vomiting as an attending symptom of chronic gastritis; but such is not the case. Nausea is a much more frequent symptom.

Shortly after eating there is a sense of oppression or a "bloated feeling" with slight soreness in the epigastrium; the latter becoming a pain only on pressure. The patients frequently complain that the food remains abnormally long in the stomach, and such may really be the case when these conditions are combined with weakness of the gastric muscular wall—atony of the stomach. The latter condition permits decomposition to take place in the ingesta; the carbohydrates ferment; the albuminoids putrify. This may really lead to a true gastrectasis.

Constipation generally exists. Occasionally diarrhea and constipation alternate.

The patients have the sensation that the evacuations are incomplete and suffer much from flatulency and rumbling in the abdomen.

We notice a diminution of mental activity, disinclination to bodily exertion, languor during the day, headache or a feeling of oppression in the head, and a morose, irritable disposition with a feeling of heaviness in every limb. Sleep is deep and long but not refreshing. Just here permit me to say that I have very little confidence in the so-called cases of "walking typhoid fever," and believe that the true condition of these cases is one of a low form of chronic

gastritis in which retrogressive changes in the nutrition of the stomach itself have taken place.

A peculiar condition first described by Trousseau is the *vertigo* gyrosa or gastric vertigo. I have now under my care a lady who suffered from frequent and severe attacks of vertigo due to chronic gastritis. These would occur without the loss of consciousness at almost any time. For a while she could not incline the head forward at all without one. Then they have come on while in bed; "the room whirling around and the ceiling moving," as she said, until she would cry out with fear. These symptoms have almost entirely left under hydrochloric acid, strychnia and lavage.

The first stage of chronic gastritis is atrophy of the mucous membrane or anemia of the stomach, *i.e.*, a condition in which complete destruction of the glandular parenchyma has taken place and has been designated as *phthisis mucosa*. After a time so severe a disturbance of the nutrition is developed that the patient dwindles away and finally dies of marasmus.

Diagnosis.—We have, first, to differentiate chronic gastritis from other diseases and then to distinguish one variety from another. Idiopathic gastritis can only be diagnosticated after ulcer, carcinoma, dilatation, neuroses or the acute gastric disorders have been excluded, and this after a careful examination with the aid of all our modern diagnostic resources. Our only positive means of diagnosis is the examination of the stomach contents. It has been found best to make this examination after the patient has taken what is call the test breakfast. Ewald's test breakfast consists of a roll and a cup of coffee. It seems to me better to substitute water for the coffee. The gastric contents are obtained from one to eight hours after the meal, according to what we wish to test for. For instance, the secretion of hydrochloric acid is at its height about one hour after eating. At that time in simple chronic gastritis we find the amount of hydrochloric acid lessened. Pepsin and rennet are small in amount, but form propeptone and peptone; usually contain lactic and fatty acids. The mucous form differs from the simple in the abundance of mucus present so that acetic acid gives a marked mucin reaction, acidity always low. Hydrochloric acid usually absent. When atrophy has taken place the stomach contents contain after the test breakfast, neither mucus, hydrochloric acid, pepsin or rennet. Where there is muscular weakness of the gastric wall it is determined by the salol test.

The chemic differentiation of carcinoma and atrophy where there is no tumor, swelling of the lymphatic glands, cachexia or hematemesis is more difficult. Ewald refers to one important point, namely, the bloody color of the stomach contents due to the presence of altered blood pigment.

Prognosis.—Chronic gastritis is a disease of long duration. Even when the disease is apparently cured the organ is left so sensitive as to predispose to a fresh attack. Then the disturbances of nutrition and the consequent deterioriation of the tissues render the system less resistant toward other poisons particularly tuberculosis. To make the chemic diagnosis more plain let us briefly rehearse the tests. Say we have the stomach contents from a patient suffering with chronic gastritis.

We first filter, then, with blue litmus test for acidity. It may turn either red or present no change. If it turns red we next test for the kind of acid. We use Congo paper knowing that if free hydrochloric acid is present we will get a sky-blue color. In this case there is no change. We try again with Gunzburg's reagent by placing a few drops of filtrate on a porcelain dish, then adding the reagent and heat. If HCl this will turn bright red. Still no change. Then we test for lactic acid with neutral ferric chlorid solution and find it present by the deep canary color given by heat. If butyric acid is present this same reagent gives a tawny color. If the stomach secretes pepsin and rennet we will find here peptones and propeptones indicated by an intense purple red on the addition of cupric sulphate, the so-called biuret reaction. For the motility we use the salol test, and for the absorptive power the iodin and starch test of the saline and acute articular rheumatism. Ewald says that a large number of the cases which are usually said to have died of old age perish from gastric atrophy.

Treatment.—In the treatment of this disease we should endeavor to replace the deficient supply of gastric juice; stimulate the depressed functions of the organ and counteract the irritant substances introduced from without. The administration of hydrochloric acid not only replaces the deficiency in this secretion, but it prevents organic fermentation, thus filling two offices at once. It should be given to its chemic effect. Usually 10 drops after eating, in as little water as the patient will tolerate and if necessary repeated two or three times at intervals of fifteen or twenty minutes.

Pepsin should only be administered in those cases in which its absence can be positively proved, and then dissolved in a solution of hydrochloric acid fifteen to twenty minutes after eating. We doubt the efficiency of pancreatin and have had no occasion to use papoid.

To stimulate the activity of the organ, lavage stands pre-eminent, except when dilatation has taken place. The douche should be combined with this; *i.e.*, after the wash water runs clear, a quantity of medicated solution may be left behind. Caution must be used in this, as serious toxic effects have been reported.

Lavage not only stimulates the gastric functions, but removes the irritant substances which would otherwise lie in that viscus and decompose or ferment, thus aggravating the disease.

It has been proved that chlorid of sodium in the blood increases the secretion of gastric juice.

Nux vomica has excellent claims for this purpose, also the bitters, quassia, gentian, etc. The carminatives are abused in this respect. The regulation of the diet and mode of eating require the most careful attention of the physician, but these would furnish separate chapters in themselves. So with the use of the numerous mineral waters. Carious teeth should be removed. The bowels which are nearly always constipated must be kept open. As the disease nears a cure this symptom gradually leaves. In this connection I wish to call attention to the most excellent results I have obtained from the use of one or two drop doses of Fowler's solution one hour or so before each meal. The mode in which it acts I do not know, but possibly by stimulating the secretions, gastric and intestinal.

Finally, out of door exercise in this, as in the successful treatment of all chronic diseases plays a most important and excellent part. Of the agents employed for this purpose the bicycle for either men or women is the one *par excellence*. It develops the mus-

cles, stimulates the secretions, furnishes the best means of oxydizing and enriching the blood and to a great extent overcomes the constipation.

DISCUSSION.

DR. J. B. MARVIN—The essayist has presented this interesting subject so clearly and with such easy diction that I fear he has glided over some of the points without emphasizing them enough. There are one or two points as to the causation; I believe he mentioned all save one. Certain conditions of the buccal and naso-pharyngeal cavities are frequent causes of chronic gastritis, and the latter will not receive benefit until the naso-pharynx and mouth have been put in good condition. I think that the naso-pharyngeal catarrh causes chronic gastritis often and not the reverse as believed by many. The essayist said nothing of the various bacteria found in the stomach and they may cut a figure in these cases. A case should never be classified until we have examined other important organs, heart, liver and lungs, and especially the kidneys. Chronic interstitial nephritis is a most frequent cause of gastric catarrh. Diabetes frequently causes gastric catarrh. It has been my misfortune to see cases who came for treatment of their stomach trouble and who had sugar in their urine. Another point is, I doubt if any case of chronic gastric catarrh fails to present evidences of malnutrition. There is a close connection between the stomach and bowel. I always put the question, and generally answer it in advance, if there is constipation, and a gastritis does not improve until the bowels are improved. They go hand in hand. I think a line should be drawn between gastric catarrh and the so-called nervous gastritis or gastrectasis. We frequently see most marked reflex nervous symptoms in chronic gastric catarrh. Those who have read Bouchard on "Auto-Intoxication," and those who have not, will be repaid by doing so; will remember he accounts for these nervous phenomena by auto-intoxication. The essayist said nothing of the chemic tests which we use in all cases at the Kentucky School Dispensary. These are best applied after a test breakfast has been given, consisting of tea, without milk or sugar, or warm water may be substituted, with a roll; or we can use this test breakfast alone and it tells us a great deal. In acute gastric catarrh the pain comes on quickly. In chronic gastritis if due to a hypersecretion, it comes on several hours after, and if due to deficient secretion we have pain, a sense of weight and fermentation. As to treatment we hardly know what to do. We begin to question whether the stomach tube does good or harm. It makes them think of their stomachs, and they may begin to use the tube themselves to their own detriment. But it is an excellent remedy; the benefits are so quick and striking that it forms a valuable part of our treatment. It is not well to pet the stomachs with peptonized milk and predigested foods; they do more harm than good. The stomach must be made to work; it needs a stimulant and exercise as it is degenerated. One of the bitters not mentioned and which far surpasses all others in my estimation is condurango. It is used in a fresh infusion. These cases need muriatic acid, and nearly all will object to acid; they complain of sour stomach, and can not understand why they must take acid, and one has to resort to all sorts of devices to make them take it.

DR. J. B. BULLITT—I wish to say a word in regard to exercise of the stomach. A rather singular method which I have heard of from one source is this: You take a stomach tube open at the end, and not at the sides, and pass it into the stomach. When the end reaches the stomach, a contraction is caused, and a gush of fluid takes place; if the tube is withdrawn slightly and again pushed in, another contraction is produced. This procedure is called, gastric gymnastics; chronic atonic conditions of the stomach and dilatation are said to be much benefited by these gastric gymnastics.

DR. CHAPMAN—I am glad Dr. Marvin emphasized two points; one that chronic gastritis is caused by naso-pharyngitis. I did not lay sufficient stress upon it. The nose and throat men are inclined to think that the pharyngitis is caused by the gastritis. As to the impression that lavage can prove harmful, I can heartily concur in that. It is a treatment which gives more relief, and comes nearer curing than any other agent that I know. But it does harm to continually introduce it as is done if the patient has one himself. As to the point mentioned by Dr. Bullitt in regard to stomach gymnastics, I always use a tube open at the end, and I nearly always fail to obtain the stomach contents, unless I have the patient press on his stomach or gag or cough. This is perhaps due to the tube being soft and compressible.

DR. J. M. RAY—I am sorry not to have heard the paper but I wish to speak of one point I heard in the discussion. That is in regard to naso-pharyngitis in relation to gastric diseases. I can not agree with the statement that so-called chronic naso-pharyngitis produces often chronic gastric disturbances.

There is only one form of muscular naso-pharyngeal disease accompanied by an increased secretion from the mucous surfaces, and that is acute coryza. The chronic form it is claimed by Bosworth, interferes with the function of the mucous glands and by hypertrophy obstructs drainage. So that secretions may become obstructed in the drainage and while there is apparently an increase of secretion there is really a diminution. The normal secretion is said to be about 1 per cent. in twenty-four hours. There is a red roughened granular condition found often in the pharynx that I believe is the result of gastric disturbances, but I can not see how nasal disease causes disturbances in the stomach. The idea seems quite prevalent especially among the laity that most of the ills of mankind are due to nasal catarrh. We all know that the great majority of nasal diseases are found to be due to local changes in the nose.

DR. CHAPMAN—In washing out stomachs I have found frequently, large quantities of muco-purulent material, often almost crusts, especially in the young who have naso-pharyngitis, who swallow it while asleep. These when in the stomach neutralize the stomach secretions, irritate the mucous membrane and undoubtedly cause chronic gastritis.

ACUTE NEPHRITIS IN AN INFANT.

Read before the Chicago Pathological Society, Jan. 14, 1895.

BY ELIZA H. ROOT, M.D.
CHICAGO.

Mother's history: A. B., age 19, unmarried, primipara, admitted to Chicago Hospital for Women and Children, Jan. 25, 1894. Urine albuminous; legs edematous; purulent leucorrhea and urethritis. Specific taint denied. Albuminuria and edema disappeared under milk diet and Basham's mixture, and leucorrhea controlled by salicylic acid injections. Child born February 26, after a normal labor lasting twelve hours. February 27, decided albuminuria with puffiness of lids, which latter soon disappeared, the albuminuria, however, continuing for four or five weeks. On the tenth day temperature rose to 103 degrees F., from mental excitement over her child's condition, but promptly fell to normal. Mother left hospital March 13 in good condition except that the uterus was still large and congested. Her occasional visits to the dispensary for six weeks enabled me to confirm the absence of syphilis.

Infant's history: Male, weight nine pounds, well developed, urination from the first manifestly somewhat difficult and painful. The fourth day temperature rose to 102.5 degrees F., attended with incessant crying, and the appearance of a papular eruption, mainly on the neck and face. About the tenth day temperature rose to 103 degrees and later 104.5, only slightly reduced by wet pack or bath. Skin became dry and branny with fissures in axilla and groin and about wrists and ankles. During the last two days of the illness the temperature fell to normal and then to 96.5 degrees. Bowel movements became thin and greenish; eclamptic convulsions appeared and then paralysis of left leg. The child gradually became comatose and died March 10.

Post-mortem findings: kidneys were swollen and full of blood, presenting the appearance of acute inflammation. The vena cava ascendens, beginning at or near the junction of the renal veins was filled with coagulated blood having all the appearance of an ante-mortem thrombus. This thrombus was followed into the left common iliac, into the external and internal iliacs, thence to the deep and superficial

veins of the thigh and readily traced into their smaller tributaries. The presence of this thrombus accounts for the paralysis of the limb and the watery semi-transparent whiteness of the foot. The umbilical vein and arteries presented nothing unusual; liver and spleen large and filled with blood; lungs congested; pericardial sac filed with straw-colored fluid; no evidence of cardiac inflammation. Veins of the brain and its membranes contained dark blood but no thrombi. Ureters and urethra patent and normal; bladder empty; stomach and intestines normal; thyroid and thymus glands normal. Perirenal fat absent or nearly so, while subcutaneous fat was present in a very small degree. Microscopic sections of the kidney have been kindly made for me by Dr. Latham, who will present them for the inspection of the Society. They show the changes of a subacute nephritis. The question that has presented itself to my mind in considering the cause of renal disease in this case is, Was the disease due to septic infection, and, if so, how did it occur? The mother was unhealthy, as her history shows. She was considered an unclean case and extra precautions were taken against further infection. She was isolated, during the lying-in, to the extent of being assigned to the care of one nurse who cared for her and her child only. I can not disabuse my mind of the idea that the infective matter still remained somewhere in the parturient canal and that infection took place through the umbilical cord.

NOTE.—Since I read this paper I have seen two infants, hospital cases, in which I made the diagnosis of renal inflammation, acute; one a boy, the other a girl. Both infants presented symptoms similar to those described in the case reported, but not so severe, as both babies recovered. The dryness of the skin, its cracking in the creases of the flexures and the temperature were nearly the same as in report, except that recovery began when temperature reached normal. In the case of the baby girl we obtained enough urine to test for albumin and found it abundant, but not enough to determine quantity per volume. Both children were very ill. I expected both to die, especially the girl, as she was worse than the boy. The mother of the little girl was not so well generally as the other, and at one time, prior to delivery, had a small amount of albumin in urine. The other mother seemed quite well. Both had a normal lying-in and left the hospital well, the babies still showing the effects of their illness but bidding fair for full recovery. Both babies showed stigmata of faulty development in the bones of the head and the ears. Mothers presented no similar signs.

DISCUSSION.

DR. G. H. WEAVER—Dr. L. Emmett Hall, of New York, has written two articles on primary nephritis in infants. The first appeared in 1887; at that time he had collected from his own practice and that of his friends during eighteen months, eight cases of what he called primary nephritis in infants, whose ages varied from 2 days to 2 years. From the literature he collected eleven more, making nineteen cases. He concluded that primary nephritis in infants is not a rare disease, but that it occurs quite frequently, although not usually recognized. Five years later, in 1892, he reported two additional cases, being all that he had seen in five years, so he then modified his first conclusion, and says that primary nephritis in infants is rare and occurs infrequently.

The symptoms he described in this condition are as follows: Continuous fever of an irregular type, generally quite high; dullness and apathy with no focal symptoms of brain disease; marked anemia without emaciation, moderate gastro-intestinal disturbance in the early part, usually vomiting later and a tendency to diarrhea; and later a tendency to bronchitis. These cases all emphasize the fact that in cases of irregular fever in infants for which there is no apparent cause the urine should be examined, and that in case of convulsions in infants the urine should always be examined. In only a few cases was there marked diminution in the amount of urine observable. Dr. Root's case, it seems to me, might possibly belong in this class, the disease of the kidney not having been caused by infection through the umbilical vessels. Changes in the liver would have been expected and changes in the vessels themselves if the infection had taken place in this way.

DR. ROOT—The temperature in this case was high and during the last two or three days irregular, as Dr. Weaver says, but there was a marked decrease in the flow of urine. No examination of the urine was made, for the reason that we could not secure a sufficient quantity of it.

DR. EDWIN HAMILL—In regard to the last point mentioned by Dr. Root, that of securing a sample of urine from a baby, by placing a flat sponge over the genitals, one may succeed very often in securing urine, without resorting to the use of the catheter.

A CASE OF NEPHRECTOMY FOR SARCOMA OF THE KIDNEY.

Read before the Chicago Pathological Society, Jan. 14, 1895.

BY D. W. GRAHAM, M.D.
CHICAGO.

This sarcoma was removed from a child 18 months old. There was no history of injury or acute disease. About six months before the operation a tumor was discovered in the child's right side, which gradually enlarged. I saw the case the last week in September and told the parents I would operate if they desired it but did not offer them any encouragement. They declined the operation at that time but returned the middle of November with the request that I operate, even if the child died. I operated with a kind of protest, they knowing all the dangers.

At the time of operation the tumor filled the entire side of the abdomen extending down into the pelvis; it was of enormous size compared with the size of the child. I operated by what is called Langenbeck's method. The incision through the wall is made in the linea semilunaris. The colon is pushed toward the middle line, the peritoneum over the kidney and tumor is cut through and stripped off with the fingers, the tumor being thus enucleated. The pedicle consisting of the usual vessels and the ureter is isolated, the tumor freed from behind and the vessels secured. I will pass this tumor around. The kidney substance is at the upper end, the capsule seems to have been ruptured and the whole mass protruded downward. The mass seems to have come out as a fungus at the pelvis of the kidney, shooting out toward the mid-line of the body, and even surrounding the vena cava. The ureter ran across the tumor. The pedicle was secured in the usual way without great loss of blood. There was a good deal of hemorrhage but it came from the bed of the tumor, there being a good deal of venous oozing which could not be checked readily. For the age and size of the patient a good deal of blood was lost, although the absolute amount was small. The patient lived about four hours and died of shock. A diagnosis of sarcoma of the kidney was made before the operation, and the microscopic examination shows it to be sarcoma of the round-celled variety. The diagnosis was based chiefly on the age of the patient. There is no way of determining beforehand from the clinical symptoms whether a tumor of the kidney is carcinoma or sarcoma, but we know that malignant tumors of the kidney in young children are relatively much more frequently sarcomata rather than carcinomata. Dr. Bishop will describe the sections he has made.

MICROSCOPIC EXAMINATION BY DR. D. D. BISHOP.

Pieces were taken from the portion of the specimen which projects above the capsular-like structure and ex-

amined microscopically. In the main we might say the structure is that of a round-celled sarcoma. The cells are rather large, have large nuclei, some are elongated having the appearance of a so-called oat-shape cell which we see in some tumors. The structure is traversed in a gross way by broad bands of fibrous tissue showing well formed connective tissue in their interiors, but as we pass from the interior of these bands toward the tumor itself, the cells become of the same character as the cells in the tumor proper, indicating that perhaps these have developed by fibrillation and condensation of the tumor structure. There are numerous small blood vessels and these show a distinct endothelial lining and a slight amount of connective tissue wall. From the number of blood vessels and the fact that the round cells are arranged rather in groups about these vessels, one might think it likely that the tumor had its origin in the vascular system, and I consider that perhaps this was the fact, because in other portions there are distinct trabeculated areas in which there are rather large spaces and the trabecular walls are lined with endothelium, very much like other angiomata, so we may consider that it is probably an angio-sarcoma. It is interesting to note in all the sections prepared and examined, about twenty-five in number, that in no part of the kidney proper was there evidence of invasion of the sarcoma. The kidney was apparently pushed to one side by the process. The sections from the kidney proper, taken from the capsular-like portion show simply an atrophic condition of the glomeruli, some slight thickening of the walls, compression of the renal tubules and increase in the interstitial tissue. Considering the apparently profound changes and the size of the entire structure the kidney is really very little altered. The renal changes would not be considered very grave if found in a kidney not compressed by a tumor of this sort. In no portion of the structure were there found any of the striated muscle cells which are said to occur often in some congenital sarcomata of the kidney, the so-called myo-sarcoma. So it seems that we have not to deal with that variety of tumor, but a round-celled sarcoma probably developed in the course of the blood vessels.

DISCUSSION.

DR. GRAHAM—Many of these cases of sarcoma in young children are accounted congenital. There was a year of life elapsing between the time of birth and the time this tumor was discovered. There was nothing in the history or appearance of things that would lead us to believe that this was not a congenital tumor and I am inclined to think the disease was present at birth.

DR. E. R. LE COUNT—In reference to congenital sarcoma of the kidney of a malignant character, as reported by Dr. Graham, it is very probable that they have their origin in the remains of the Wolffian bodies, while with tumors that appear later in life there is a tendency to consider their origin as having some connection with remnants of the supernumerary adrenal glands.

DR. BISHOP—Dr. Le Count speaks of the Wolffian bodies in connection with these tumors, and I ought to add that in some of the sections are tubular-like structures lined with columnar celled epithelium, suggesting that they are the remnants of the ducts of the Wolffian body, and should not be overlooked, but they were so few in number and had no apparent relation to the tumor so were not considered as having any etiologic significance. The tumor perhaps, but not necessarily, occurred from that structure. I did not mean to say that this tumor was not in my opinion congenital. I simply stated that the striated muscle cells which are often present in such tumors were not present in this; a congenital tumor may be round-celled as well as any other variety.

A CASE OF TUBAL PREGNANCY.

Read before the Chicago Pathological Society, Jan. 14, 1895.

BY BERTHA VAN HOOSEN.

CHICAGO.

Mrs. S., aged 22, married three and one-half years had a miscarriage after being married five months. Thre months after the miscarriage had an attack of pelvic inflammation, and a pyosalpinx on the right side was diagnosed by Dr. Bayard Holmes, who was caring for the patient at this time. She was confined to bed for six months at this time, and spent six weeks of the time in Mercy Hospital. She improved while under hospital treatment and was told that she might fully recover if she continued the hot douches after leaving the hospital. Sept. 19, 1894, two years later, the patient came to Dr. Hickey-Carr complaining of nausea and with the history of having missed two monthlies. Examination of the pelvis showed the uterus enlarged and a mass was felt on the right side. Liquid diet was ordered; September 23, the patient was feeling well and took an eight-mile ride on the cable car. September 24, the following day at 3 A.M., she was seized with pain in the pelvis and a neighboring physician was called in. He gave her three doses of codeia ¼ gr. each. At 8 A.M. on same morning Dr. Carr was called and found her still in pain; slight hemorrhage from the uterus but no sign of membranes, pelvic tenderness and the mass on the right more distinctly outlined.

September 24, 25, 26, patient kept in bed on liquid diet without anodynes and efforts made to move the bowels with calomel, castor oil, olive oil, glycerin and water enemas but with no success. Up to and including September 26, the fourth day of the attack, the pulse was 90 to 96, temperature 99 to 99¼, and the pain constant. September 27, at 4 A.M., the patient had a third violent attack of pain and by 9 A.M. the pulse had risen to 120, temperature 100. Dr. Carr was obliged to leave the patient to attend court, and did not see her until 2 o'clock in the afternoon. At 1 o'clock she had been seized with pain and went into collapse. When Dr. Carr saw her at 2 P.M. there was dullness in the lower segment of the abdomen and the mass of the right was very indefinite. I saw the patient two hours later in consultation with Dr. Carr. The temperature was then 100, and the radial pulse 160. The patient was blanched and appeared to be sinking rapidly.

Ectopic gestation was suspected and an exploratory operation was decided upon; at 6:30 P.M. the patient was taken to the Chicago Hospital, a distance of four blocks from her home. Dr. F. Byron Robinson saw the patient at 8 P.M., confirmed the diagnosis and at 8:15 with the assistance and consultation of Dr. Robinson, I opened the abdominal cavity, the lower portion of which was packed with loose black clots of blood. These with a quantity of liquid blood were turned out, the appendages on the right side were removed, the cavity freely irrigated, glass drainage tube inserted and wound closed with silkworm gut. At 9 P.M., a few minutes after the operation the pulse was 152, temperature 101.4. From this time the pulse dropped until on the seventh day it did not go above 100. On the fourth day the decidua was expelled entire. Drainage removed on the sixth day and stitches tightened; the wound closed by figure 8 ligature and the patient left the hospital on the fourteenth day. I saw her last week and she asserted she had not been so well as now, since her marriage. Since the operation she has gained in weight, menstruates regularly, and is at all times perfectly free from pain.

The specimen is a very typical one and shows what a violent effort was made to accomplish tubal abortion during the four days before tubal rupture took place.

Such a mishap as this illustrates, fortunately does not occur every day, because nature has practically castrated such women by closing the tubes, or so modifying the secretion that conception can not take

place, but my reading leads me to believe that there are many undiagnosticated cases. In fact, it does not seem to be the etiology, the pathology or the treatment that balks us in dealing with this condition, but the blunders in regard to it seem to be confined mainly to the diagnosis. Some of the most typical diagnostic points are well brought out in this history. Before rupture we have history of sterility and severe tubal disease; mass felt on right side; rapid increase in size of mass; symptoms of pregnancy; uterine hemorrhage. After rupture we have sudden pain and collapse; slight elevation of temperature; rapidity of pulse; physical signs of internal hemorrhage. To save a patient after such an accident as tubal rupture seems to me more good luck than good management, but to prevent such an accident from occurring is worthy of the most ambitious efforts.

In this case, salpingotomy should certainly have been performed after the first miscarriage two years ago, as earnestly advised by both Dr. Holmes and Dr. Carr. An infected and diseased tube can never be anything but a source of danger to a woman's health, both on account of its relation to the peritoneum and its inaccessibility to treatment; and for the same reasons I see nothing but salpingotomy that can be relied upon to permanently restore to health a woman with diseased tubes.

If, however, the patient does not give us the opportunity to remove the diseased tube before such a condition as ectopic gestation can occur, should a suspicion of pregnancy in the uterus prevent us from interfering with any mass that could be felt in the pelvis, the conditions that might most easily be mistaken for ectopic gestation are pyo- or hydrosalpinx or an exudation about the tube complicating normal pregnancy. If we had any one of these conditions without pregnancy, an abdominal section would certainly be indicated, and the co-existing pregnancy can not have any but a deleterious influence upon these conditions, by increasing congestion and stopping drainage through the uterus. The effect of any of these conditions upon pregnancy is to constantly threaten aborting before full term is completed, to cause rupture of the tube or prevent natural delivery at the time of confinement, and after the uterus is emptied to increase the danger of sepsis and pelvic peritonitis.

There are so few of even the most distinguiehed gynecologists who are able to make an accurate diagnosis of any pathologic condition in the pelvis, outside of the uterus, before an incision has been made in the abdominal wall, that the general practitioner in whose hands these cases first fall must feel himself very inadequate to meet the possible emergency. But every practitioner should be able to say whether the uterus was enlarged, and that there was a mass at one side and on finding such a condition should he not advise an exploratory operation at once? A few cases with personal responsibility in ruptured tubes has increased my courage in prompt action and my admiration for the judgment of the man who says conservative surgery means increased mortality.

DISCUSSION.

DR. E. F. GAVIN—I have been strongly tempted to suspect abdominal pregnancy of an ectopic nature in a number of cases of acute peritonitis in married women, and I think so-called cases of peritonitis are frequently cases of ectopic gestation.

DR. D. W. GRAHAM—This is a very good report of the case and is sound teaching. I know the author of the paper is not the author of the last remark; that it is a quotation in regard to conservative surgery. I always feel like fighting when I hear the term used as it is used nowadays. Conservative surgery means that kind of surgery which will save the life or health of the patient. That is my definition of conservative surgery. I know the author of the paper did not use the term in an improper sense, but I want to protest against the phrase being employed every time we are discussing subjects which have to do with removing something from the body. It might be proper to say conservative treatment, or do-nothing treatment, or temporizing treatment, but conservative surgery means conserving the patient's life or health and all the organs compatible with these two conditions. I want to put myself on record as giving that interpretation to conservative surgery.

DR. J. L. MCCOLLUM—I feel that too much can not be said in praise of this paper. I have had some experience in operative gynecology, and I must say that I indorse most heartily the ground the Doctor has taken in not hesitating to mutilate, as this method has been termed by a great many writers who cry out against the removal of the tubes. I have had a clinic in gynecology for the last six years and have had an opportunity to watch cases, some of them being under treatment for two years. I would have them discharged as cured but they would come back in a few weeks with the same trouble, which if not as bad was in the way of becoming so shortly. I can not see any reason why we should hesitate to remove the tubes after a reasonable course of treatment is unsuccessful.

DR. F. B. EARLE—I certainly think the author deserves congratulations, both on the paper and the result of her treatment. The diagnosis of ectopic gestation is very difficult before rupture of the sac; in fact, some authors state that it is impossible. However, when we have a history as in this case, of previous disease of the tube with probable occlusion we have one of the principal factors in the etiology. Amenorrhea and a period of sterility so frequently precedes ectopic gestation that the usual symptoms of pregnancy following a condition of that kind should always excite our suspicion. When there is a bloody discharge from the uterus with the negative symptoms of pregnancy, with a tumor presenting at the side of the uterus and pain at the site of the tumor, particularly if that tumor presents a soft boggy feeling, then there is every reason in the world to suspect extra-uterine pregnancy. As to treatment, there can be no doubt as to the indications when the diagnosis is properly made. The ovum at that site is of dangerous omen and the sooner it is gotten rid of the better. The use of electricity to destroy the ovum has many advocates but laparotomy is comparatively safe and inasmuch as it is, and may be called for even after death of the ovum, probably the best method is to resort to it as the primary treatment.

DR. BERTHA VAN HOOSEN, in closing the discussion, said: I would like to say one word about conservative surgery. I suppose by conservative surgery we mean as simple an operation as possible to save the woman's life; that depends a good deal upon the judgment. I saw an extra-uterine pregnancy operated upon at the Post-Graduate Hospital; the patient had been consulted over by several doctors and each one proposed curetting, until it happened that one consultant thought it might be better to see exactly the condition inside the pelvis. Abdominal section was made and it was found that she had an ectopic gestation on one side and a very large pus tube on the other. I think if curetting had been resorted to it would have been what Dr. Graham would call conservative surgery.

ORIGINAL INVESTIGATIONS ON THE NATURAL HISTORY, (SYMPTOMS AND PATHOLOGY) OF YELLOW FEVER. 1854–1894.

BY JOSEPH JONES, M.D., LL.D.
NEW ORLEANS, LA.

(*Continued from page 553.*)

CHAPTER VIII.

Case of gastritis, fever and jaundice, resulting from exposure and bad diet. John Austin, age 16, laborer, admitted to Charity Hospital Nov. 30, 1876. Says that he had felt unwell for three or four days before admission. Complained

of loss of appetite and diarrhea. Ordered light diet and bismuth mixture.

℞. Syrupi morphiæ . . . . . ℥iij
Bismuthi subnitrates . . . . . ʒiij
M: Sig., teaspoonful three times a day or every four hours if necessary.

December 4, temperature of the axilla 101.4. December 5, 101; December 6, eyes and skin decidedly yellow, patient complains of feeling very heavy and depressed. Morning pulse 82, respiration 18, temperature 99.8; P.M., temperature 100.5. December 7, morning, jaundice increasing, decided yellow color of conjunctiva and skin; pulse 72, respiration 18, temperature 99.5; evening, pulse 72, respiration 18, temperature 100.5. December 8, urine high colored and loaded with bile, albumin absent; chlorids abundant; yellow color of conjunctiva and skin. A.M., pulse 74, respiration 18, temperature 99; evening, temperature 100.5. December 9, morning, pulse 80, respiration 18, temperature 95.5; evening, pulse 80, respiration 18, temperature 101.5. December 10, evening, pulse, 76, respiration 18, temperature 102.6. Urine loaded with bile; skin yellow, hot and dry. December 11, morning, pulse 80, respiration 18, temperature 99; evening, temperature 102. December 12, morning, pulse, 80, temperature 100.5; evening, temperature 101.6. December 13, during the past four days quinin has been freely given, the bowels having been previously evacuated by a mercurial purgative. The depth of the color of the skin is now decreasing. Morning, pulse, 84, temperature 99.8; evening, temperature 100.5. Continued to improve and was discharged.

We observe in this case in which jaundice accompanied fever, perhaps of a malarial character, that on January 10, with a temperature of 102.6, the pulse was only 76 beats per minute.

PERNICIOUS AND CONGESTIVE MALARIAL FEVER.

The rate of mortality in my surgical practice has varied with the season, the type of the disease and the manner of admission of patients. When from such causes as scarcity of funds, the lighter cases of disease were treated as out-door patients, and only those seriously ill admitted, the rate of mortality among the cases treated in the wards was relatively increased. At the same time the number of out-door patients prescribed daily in the wards was greatly augmented. I have carefully excluded from the statistics recorded in my "Medical and Surgical Memoirs," those relating to out-door patients connected with the Charity Hospital, although during, some seasons they have exceeded in numbers those actually treated in the wards. During the twenty-seven months of hospital service, preceding April 1, 1872, the total number of cases admitted into my wards in the Charity Hospital was 1,111; of this number 856, or 77.9 per cent. were discharged, and the deaths amounted to 106, or 9.4 per cent. of the entire number treated; during this period, also, a large number of the cases which terminated fatally were brought in moribund. During the six months ending April 1, 1873, the total admissions numbered 213; of this number 145, or 68 per cent. were discharged. The deaths amounted to 39, or 18.5 per cent. During the first period the deaths amounted to 1 death in 10.4 cases; in the latter period, 1 death in 5.46 cases.

During a period of six months, Oct. 1, 1873 to April 1, 1874 the total admissions numbered 517; of which 436 were discharged and 51 died; the deaths amounting to 1 in 10.13 cases, or 98 per cent. During this period more than one-third or 19 deaths were caused by yellow fever, many of which were brought in moribund, with jaundice and black vomit.

During a period of twelve months, Oct. 1, 1874, to April 1, 1875; Oct. 1, 1875, to April 2, 1876, 765 cases were treated, with 65 deaths, or one death in 11.8 cases, or 8.5 per cent.

I have selected the following cases from the clinical records of my wards, to illustrate the condition in which many of the patients entered, and the effects upon the rate of mortality:

Case 1.—Pernicious malarial fever (malarial coma). Unknown man, age about 35, entered Charity Hospital Oct. 17, 1872; died in six hours. Patient brought to the hospital in an insensible condition, from which he could not be aroused; rapid feeble pulse; skin sallow with a decided tinge of yellow; extremities cold, congested and mottled; lips and fingers purple; passes urine and feces freely in bed; head and trunk hot; temperature of axilla 103. Sinapisms and alcoholic stimulants failed to arouse the patient; large doses of quinin administered by enema have no effect.

Post-mortem three hours after death: Blood vessels of brain congested with dark blood; lungs and heart healthy; mucous membrane of stomach and intestines slightly congested; liver slate-colored on the exterior and bronzed within; abundant pigment deposits in portal capillaries; spleen enlarged and softened; splenic mud contained numerous pigment particles; kidneys normal; gall bladder distended with dark green bile; cavities of heart contained fibrinous clots; blood of liver of a dark purple color.

Case 2.—Pernicious malarial fever (malarial coma). F. F. Payne, age 32, native of Virginia, entered Charity Hospital Oct. 28, 1872, died October 29, twenty hours after entrance. Has been exposed in swamps of Mississippi River. Admitted in a comatose state. Rapid pulse, congested purplish extremities. When aroused by violent shaking, appears to be in a state of great agitation and gives incoherent answers. Passes excrements in bed. Sinapisms, alcoholic stimulants and quinin produced no permanent effects.

Post-mortem six hours after death: Heart and lungs normal; fibrinous clots in cavity of heart; liver slate-colored on the exterior and bronze within; spleen enlarged and softened; gall-bladder distended with dark green bile. Stomach contained a considerable quantity of greenish-yellow fluid resembling bile; numerous pigment granules were observed in the structures of the liver and spleen.

Case 10.—Malarial congestion or pernicious fever. Charles Smith, native of Switzerland, age 60; entered Charity Hospital Oct. 18, 1872, and died October 19. During the summer and fall has been exposed to swamps and marshes. Entered in a state of wild delirium. Rapid feeble pulse; rapid respiration; prostration of muscular and nervous forces; capillaries of extremities congested; head and trunk hot; temperature of axilla 103, which continued up to the time of death. Passed feces and urine in bed. Sinapisms, diffusible stimulants and quinin produced only temporary improvement and the intellect was restored but for a short time. Intense jaundice appeared before death, which occurred in thirty-six hours.

Post-mortem six hours after death: Surface golden colored; heart and lungs normal; liver slate-colored on the exterior and bronze within; much pigment in portal and hepatic capillary network. Gall-bladder distended with dark almost black greenish bile; spleen enlarged and softened; kidneys healthy.

Case 3.—Malarial, congestive or pernicious fever. John Kerrin, age 39, native of Denmark. Has suffered for some time with malarial fever, in a low, unhealthy, marshy location. Entered Charity Hospital moribund, pulseless, comatose, Feb. 9, 1873; died in twenty-four hours, Feb. 10, 1873. Diffusible stimulants, sinapisms and sulphate of quinia induced only temporary improvement.

Post-mortem examination: Heart normal; contained fibrinous clots; malarial liver, slate-colored on exterior and bronze within, loaded with black pigment; spleen enlarged, softened and loaded with pigment.

Case 4.—J. Duber; malarial fever and dysentery; native of Germany, age 45. Has been exposed in swamps and has been subjected to scant diet and bad water. Entered Char-

ity Hospital Nov. 12, 1872, and died November 19. Entered hospital in a most filthy and miserable condition; comatose; pupils contracted, pulse rapid and thread-like—so rapid and feeble that the number of beats are determined with difficulty. Bowels loose, passes feces and urine in bed. Has been sick for some time. Immense bed sores are forming over scapulars, sacrum and hips. Under the use of large doses of quinin and opium, carbonate of ammonia and alcoholic stimulants the patient rallied and at one time I entertained some feeble hope of his gradual improvement. The change, however, was only temporary, and death appeared to result chiefly from the profuse discharges from the bowels; patient died six days after entering the hospital.

Post-mortem six hours after death: Heart and lungs normal; liver slate-colored on exterior and bronze within with much black pigment; spleen enlarged and contained much pigment; ileum, colon and rectum much congested; numerous ulcerations in mucous membrane of colon and rectum. In the chronic dysentery of the Mississippi Valley and of the Southern States generally, I have found by post-mortem examination that ulcerations of the large bowels are almost always present.

Case 5.—Malarial congestive fever, with hemorrhage from the bowels. John Kelly, age 42, native of Ireland. Entered November 11 and died November 13. Cause of disease, exposure on banks of Mississippi and bad diet. Entered in a delirious feeble state with rapid feeble pulse; distended abdomen; enlarged liver and spleen; anemic, sallow, greenish-yellow malarial hue. Passes foul stinking feces in bed. On the night of the 12th the patient had a prolonged (congestive) chill, which was attended by a profuse discharge of fetid bloody matters in his bed. Quinin, opium, stimulants and sinapisms produced only temporary effects, and prolonged life only a few hours.

Case 6.—Malarial congestive fever and dysentery; profuse nemorrhage from bowels. F. Harrington, age 33, native of Ireland. Entered Charity Hospital Jan. 11, 1873, died January 21. Has been exposed to the prolonged action of malaria, cold, and wet, and bad diet in swamps along the Jackson R'y. Entered with feeble rapid pulse; sallow and anemic, jaundiced hue; liver and spleen enlarged; suffers with quotidian intermittent fever and painful chronic dysentery; discharges from bowels painful, frequent and loose. Under the free and continuous use of subnitrate of bismuth, opium and quinin, with milk and rice diet, there was marked improvement. On the night of January 18, patient had a prolonged and severe congestive chill attended with profuse hemorrhage from the bowels, which was followed by collapse and death.

Post-mortem six hours after death: Heart and lungs normal; liver slate-colored on exterior and bronze within, with much pigment matter; spleen enlarged; mucous membrane of large intestine ulcerated.

Case 7.—Pernicious fever and dysentery terminating fatally with profuse hemorrhage from bowels. Timothy Harrington, age 32, laborer; admitted to Charity Hospital Jan. 11, 1873. Patient states that he was taken two weeks ago with violent pain in the lower bowel, with frequent desire to go to stool, and great tormina and tenesmus. Bowels moved six or eight times in twenty-four hours. January 13, pulse 100, of good force and volume. Complexion anemic and greenish-yellow, spleen and liver enlarged and has been exposed to the action of malaria. Temperature 102 degrees. Applied blister on right iliac region for relief of pain. Administered 5 grains of quinin and 10 drops of the tincture of opium every three hours, until four doses were taken. Fever not affected by quinin perceptibly; patient restless and complains of pain in bowels. January 15, pulse 108, very feeble; patient feeble and weak. During the night of the 15th had a protracted and severe chill of the type ordinarily called congestive; extremities purple; pulse a mere thread. January 16, patient in a state similar to the cold stage of congestive fever; cold clammy sweat on the surface; complete prostration; pulse rapid and feeble; turpentine stupes and sinapisms were applied and quinin and alcoholic stimulants administered, both by the mouth and by the rectum. These measures brought on reaction and the patient appeared to be improving. The temperature of the axilla, however, during this period of depression and coldness of the extremities was above the normal standard, as will be seen by the following record: January 13, temperature 102, pulse 100, respiration 18. January 14, temperature 100, pulse 99, respiration 17. January 15, A.M., temperature 101, pulse 86, respiration 19. January 16, temperature 101.5, pulse 108, respiration 18. January 17, temperature 102, pulse 88, respiration 23. January 18, patient vomiting large quantities of biliary matter and utterly unable to retain anything on his stomach; A.M., temperature 101, pulse 84, respiration 18. January 19, during the nights of the 18th and 19th the patient was again affected with a prolonged congestive chill, attended with profuse hemorrhage from his bowels. His bed was literally flooded by the hemorrhage from the bowels. Pulse 128, respiration 18, temperature of axilla 100. I examined the urine with great care and interest in the case, as it bore striking resemblance to some cases of malarial hematuria. The urine contained no blood corpuscles and no albumin, but abundant urea, urates and uric acid; was of a bright straw color, strong acid reaction; specific gravity 1025. January 20, temperature 100.5, pulse 120, respiration 20. Died January 20.

Post-mortem. Twelve hours after death: Heart and lungs normal; liver enlarged, slate-colored on exterior, bronze within, loaded with pigment particles; spleen enlarged and softened; mucous membrane of intestine congested; large intestine ulcerated.

Case 8.—Intermittent fever arrested by full doses of the sulphate of quinia. James Davis, age 25, native of England, has been exposed to the action of malaria in the swamps of the Red River. Entered Charity Hospital January 19, discharged Jan. 27, 1873. Upon entrance complained of pain in right side. Had severe chill during night of 21st. Bowels opened with 10 grains of calomel, combined with 5 grains of quinin and followed with 5 grains of quinin every two hours, until 20 grains were taken. Under the action of the quinin there was a rapid subsidence of the temperature. The quinin was continued; about 10 grains being administered daily for several days; no return of chill and fever. This patient had had chill and fever every alternate day up to entrance in hospital. The following observations illustrate the rapid fall of temperature under the action of quinin: January 21, 8 A.M., chill just passing off, temperature of axilla 106.3; quinin freely administered. At 8 P.M., temperature 102.3. On 22d, at 8 A.M., temperature 99.3; 8 P.M., temperature 99. On 23d, 8 A.M., 99.4; 8 P.M., 100. On 24th, 8 A.M., 98.5; 8 P.M., 98.4. On 25th, 8 A.M., 98.4; 8 P.M., 99.2. On 26th, 8 A.M., 99.4.

Case 9.—Congestive fever; loss of muscular power, general paralysis, loss of memory. Recovery. Peter O'Brian, age 41, native of Ireland, laborer. Enjoyed good health up to November, 1872, when he left St. Louis, Mo., where he had been employed as a ditcher, with the intention of settling in New Orleans. On his passage down the Mississippi River to New Orleans he was robbed and left destitute. After arriving in this city he was for nearly a week without shelter or sufficient food, and slept at night on the levee without covering of any kind, during cold and inclement weather. This exposure and want of food so reduced the strength of the patient that he was compelled to apply for lodging at the police station, where he was "very ill with chills and fever." From the police station he was transferred to the workhouse, in which place "becoming much worse," he was sent to the Charity Hospital. He was brought in January 12, 1873, in an insensible comatose state, with loss of speech and power of motion. Lay insensible in the bed, passing his urine and feces involuntarily. Could not be aroused. At times the patient appeared to suffer with true malarial chills, attended with shivering, depression of the temperature of the extremities, elevation of that of the trunk and congestion of the peripheral capillaries, and followed by general diffusion of heat and high temperature.

Regarding the chills, fever and coma of malarial origin and aggravated by exposure and starvation, I placed the patient upon a solution of quinin:

℞. Quiniæ sulph. . . . . gr. xxx.
Acidi citrici . . . . . ʒss.
Tinct. cinchonæ comp. . . . . f ʒviij.

Mix: Tablespoonful in wine glassful of water, every four hours; and ordered beef tea and milk punch, every two hours.

Under this treatment, the improvement was slow but gradual, and on January 7, he was able to give a

few coherent answers. The brain, however, was in such an enfeebled condition that he was able to give his name and answer a few questions, when his mind would wander and he would relapse into an unconscious condition. The quinin with tincture of cinchona and quassia, and the nutritious diet was continued, and on January 13, the thirty-second part of a grain of strychnia, in solution with the citrate of quinin and iron was administered three times a day.

℞. Strychnia sulph. . . . . grs. ij.
Acidi citrici. . . . . ʒij.
Quiniæ et ferri citrati . . . . . ʒiij.
Aquæ destillatæ . . . . . f ʒviij.
Mix: Sig., teaspoonful three times a day.

This patient was carefully observed by the students of the ward, and was also at regular intervals brought before the entire class in the amphitheater, in order that the gradual improvement of the mental and muscular power might be noted. The patient slowly progressed to complete recovery and was discharged at the end of sixty days.

CHRONIC MALARIAL POISONING.

Case 1.—Great anemia; fatal results. D. Hoffman, age 28, native of Germany, came to this country two years ago. After remaining in New Orleans one month, went to Franklin Parish to work on a plantation. Was taken sick with chills and fever three weeks before entrance into the hospital, and during this time had little or no medical attendance and had but indifferent supplies of food. Entered Charity Hospital, Oct. 28, 1873. Pale, anemic; hands bloodless and when held up to the light resembled semi-transparent light yellow and greenish wax. Countenance pale, yellowish green, swollen and bloated. Lips and tongue pale like the face; tongue pale, large, flabby, with the edges indented by the teeth. Action of heart loud, rapid and irritable, with loud anemic murmur. The anemia in this case was as intense as in the most pronounced cases of chronic malarial poisoning in the Mississippi valley. Belly and lower extremities anasarcous. October 29, 8 P.M., pulse 110, respiration 20, temperature 103.5. October 30, 8 A.M., pulse 104, respiration 20, temperature 101.5. October 31, 8 A.M., pulse 106, respiration 24 temperature 101.5; 8 P.M., pulse 106, respiration 24, temperature 101. November 1, pulse 100, respiration 20, temperature 101.5; 8 P.M., pulse 108, respiration 25, temperature 101.5. November 2, pulse 108, respiration 18, temperature 101.5; 8 P.M., pulse 100, respiration 20, temperature 100. November 3, pulse 116, respiration 28, temperature 101.6; 8 P.M. pulse 112, respiration 32, temperature 100, November 4, pulse 104, respiration 22, temperature 101. The patient complained of pain in the epigastrium and region of heart together with great dyspnea. The difficulty of breathing appears to be clearly due to edema of the lungs, induced by the watery condition of the blood, and is similar to the universal anasarca with which all parts of the patient appeared to be afflicted. The distress in breathing and the pain in the heart increased during the night, and was attended with great thirst. The patient died at 8 A.M., November 5. Death apparently due to edema of the lungs. The preceding changes wrought in the blood and textures by the malarial poison were the chief causes of death.

Autopsy: Two and one-half hours after death. Body warm and limber in *rigor mortis*. Exterior, full bloated anasarcous appearance; cellular tissue infiltrated with yellow serum, color greenish yellow, resembles a Chinaman. Chest, lungs bloodless, pale, anemic; edematous. Heart enlarged, with dilatation of right auricle and ventricle; color of heart natural; when the textures of the heart were carefully examined under the microscope with magnifying powers of various degrees, the transverse striæ were found to be distinct and there were deposits of granular and pigmentary matter within and around the fibers of the heart as in yellow fever. Cavities of the heart distended with dark fluid blood. Specific gravity of blood 1023.3; specific gravity of serum 1017; solid matters in 1000 parts of blood 77.71; in 1000 parts of serum, 60.94; 1000 parts of blood in the patient contained not more than 17 parts of red blood corpuscles in 68 moist blood corpuscles, while in healthy blood the moist corpuscles may reach 600 parts; the liquor sanguinis 400 parts. In the present case the liquor sanguinis was 932 parts in 1,000. Under the microscope, the colorless corpuscles were found to be greatly increased, relatively to the colored corpuscles. Abdominal cavity: Liver slate on the exterior, and bronze within. Under the microscope the liver cells were found to be loaded with dark pigment particles, which were also deposited in large numbers within and around the portal capillaries. When sections of the liver were made with Valentine's double-bladed knife and examined under the microscope, numberless dark pigmentary masses were seen both in the portal and hepatic systems of capillaries. Liver firm, evidently undergoing a hardness or cirrhotic change which appeared to be due to the action of malaria. Gall bladder distended with dark green bile, about two fluid ounces. Bile thick and ropy. Specific gravity of bile 1022. Solid matter of bile 1000 parts, 82.19. The bile was actually of very nearly the same specific gravity as the blood, and contained more solid matter. Spleen enlarged and loaded with dark pigment particles. Kidneys firm and normal.

In the preceding case quinin, nutritious diet and alcoholic stimulants were used but without avail.

Case 2.—Chronic malarial poisoning; intense anemia; jaundice; high temperature; anasarca; fatal issue. P. Eghart, age 25, laborer, native of Germany. Has been in Louisiana eight months. Has been living in a low swampy region. Has had chills and fever, with little or no medication and with scant supplies of coarse food. Entered the Charity Hospital on the evening of Nov. 22, 1873. November 23, pale, sallow and greenish-yellow complexion, bloated, swollen features; extremities edematous; scrotum swollen; feeble prostrated condition; great prostration of nervous and muscular forces; rapid feeble pulse; loss of appetite; anemia complete; lips and tongue pale; when hands are held up to the light they present a wax-like almost semi-transparent appearance; tongue pale, flabby and indented at the sides; urine high colored but free from albumin and casts.

Before coming to this country this patient followed the trade of architect and enjoyed good health. His present deplorable condition is clearly referable to the action of the malaria of the swamps.

November 24, 8 A.M., pulse 112, respiration 21, temperature of axilla 105 degrees, 8 P.M., temperature 104.8. November 25, continues in the same condition only apparently more feeble; can take but little nourishment. Quinin administered freely; 8 A.M., pulse 116, temperature of axilla 103; 8 P.M., temperature of axilla 104 degrees. November 26, delirium, great prostration, jaundice quite intense. Pulse rapid and feeble; skin hot and dry; tongue dry and pointed. Great thirst, nausea and vomiting. Can retain no nourishment on stomach. It has been difficult to introduce nourishment by the rectum on account of the irritable condition of the bowels. Urine high colored but free from albumin and blood. Chlorids present but diminished in amount. 8 A.M., temperature 102; 8. P.M., temperature 103. Died at 6 A.M., November 27.

Autopsy three hours after death: Body warm, limbs flaccid. Exterior, color of surface yellowish-green; lower extremities edematous; belly full. Thorax: Pericardium contained about two fluid ounces of golden yellow serum. Heart, of the normal deep color of this organ in health; perhaps it would be more accurate to describe the color as of a deep purplish red; muscular structures of the heart firm. Under the microscope the muscular fibrillæ presented a normal appearance, with distinct transverse striæ; and there was also a complete absence of the yellow granular molecular matter and oil

globules characteristic of yellow fever. Surely such cases as these now recorded, when the malarial poison has exerted its unobstructed action in healthy Europeans, must yield unexceptionable results in settling the character of the changes induced in the chemistry and minute anatomy of the organs by the malarial poison. Heart normal in size.

Microscopic and chemic examination of the blood from the cavities of the heart and from the vena cava:

Specific gravity of blood	1021
Specific gravity of serum	1015
Solid residue in 1,000 parts of blood	73.00
Solid residue in 1,000 parts of serum	58.00

The blood of this patient contained less than sixteen parts of dried colored blood corpuscles in 100 parts of blood. The true composition of the blood as compared with that of normal blood would be 64 parts of moist colored corpuscles and 936.00 parts of liquor sanguinis, against 600 parts of moist corpuscles and 400 parts of liquor sanguinis in healthy blood.

The blood from the cavities of the heart contained a large number of dark irregular masses of hematin of various sizes, from 1-2000 to 1-500 of an inch in diameter. These dark pigment masses were similar in all respects to those found in the textures of the liver and spleen. The blood also contained oil globules which accumulated upon the surface during the coagulation. Fibrin diminished, coagulum large and soft. Heart normal in size and structure. Lungs healthy with the exception of hypostatic congestion of dependent portions. Abdominal cavity: Stomach distended with gas, and pale; anemic in appearance. Contained a quantity of liquid deeply tinged by bile.

Liver: Enlarged and somewhat hardened; deep slate color on the exterior and bronze within. Liver cells contained but few oil globules, but on the contrary many dark pigment particles. Sections with Valentine's double-bladed knife, revealed under the microscope numerous irregular masses of dark pigment, deposited both in the portal and hepatic capillary network. The pigment was deposited on the walls of the veins and secreting structures as well as in the cellular interspaces. Gall bladder flaccid and contained about 50 grams of thin mucoid yellow bile, loaded with the desquamated cells of the mucous membrane of the gall bladder. Spleen, enlarged and softened, with numerous dark pigmentary particles. Kidneys, normal, with the exception of two slate-colored spots, about half an inch in diameter on each kidney. Discoloration due to deposits of black pigment particles.

Remittent fever. B. Casavan, age 27, laborer, native of France. Entered Charity Hospital Nov. 6, 1875. Patient entered with delirium and jaundice, and upon a superficial view resembled a case of yellow fever. November 7, 8 A.M., pulse 115, respiration 30, temperature of axilla 104.5. Tongue very red about the edges, furred in the center and cracked. Hemorrhage from both tongue and gums. Gums red and swollen. Upon inquiry I found that this patient had been working on the lower coast and had suffered with paroxysmal fever for about twenty days before entering the hospital. At 8 A.M., pulse 137, respiration 24, temperature 105.2. Notwithstanding the increase in the pulse, which differs from that of yellow fever, the appearance of this patient resembles closely that of yellow fever. A careful record of the pulse, respiration and temperature was kept and the urine examined daily; the case although presenting in its general features the appearance of yellow fever, was clearly not this disease, as shown by the following facts: 1, the temperature exhibited marked periodic depression and elevation as in paroxysmal fever; 2, the urine was wholly free from albumin and casts and manifested periodic changes as in malarial fever depositing during the remissions heavy deposits of urates and triple phosphates. The fever was finally and completely arrested by sulphate of quinia and the patient discharged December 1. The following is the record of the temperature, pulse and respiration:

Date.	Pulse.		Resp.		Temp.	
1873	M.	E.	M.	E.	M.	E.
Nov. 7	115	137	30	34	104.5°	105.2°
8	117	133	31	37	102	104
9	96	102	27	36	102	103
10	96	90	28	30	101.5	102
11	96	90	17	26	100	101.5
12	84	. . .	30	. . .	101.5	. . . . .
13	90	96	30	30	102	101.2
14	102	96	30	24	103.5	103.5
15	80	90	18	30	100	102
16	80	80	21	21	101	103.5
17	90	. . .	24	. . .	102	. . . . .
18	78	. . .	21	. . .	101	103
19	80	. . .	18	. . .	100.5	. . . . .
20	75	. . .	18	. . .	101.5	102.2
21	82	72	24	22	100.2	100.6
22	82	. . .	18	. . .	100	101.2
23	84	. . .	20	. . .	99.5	102.1
24	84	. . .	. .	. . .	99	101
25	82	. . .	18	. . .	100.2	. . . . .

PATHOLOGIC ANATOMY OF THE HEART IN YELLOW FEVER.

It appears to be well established that in malarial fever the pulse and temperature are subject to great and sudden variations, and that quinin has the effect of dimininishing the frequency of the pulse, so that in many grave cases of malarial fever, the pulse especially when the patient has been treated with quinin falls to a very slow beat as in yellow fever. This will be illustrated by the following statement of cases, which I have selected, as it were at random without any reference to a special selection:

Remittent fever. Henry Bouteau. Entered Charity Hospital Sept. 29, 1873; native of Germany. Had been working in Red River rapids, and had suffered with intermittent fever for two weeks before entering hospital. Pale, anemic, had had chills every day. October 18 had a severe paroxysm of fever which is here recorded. Discharged cured October 27. Urine light color and without albumin. A.M., pulse 112, 80, 68; respiration 50, 47, 30; temperature 105.4, 100.5, 98. P.M., pulse 105, 85; respiration 47, 45; temperature 103.2, 101.

Remittent fever. I. Madden, age 22, native of Germany. Entered Charity Hospital October 1, with severe hemorrhage and high fever. Arrested temporarily by quinin. October 8, day of first observation recorded; headache, bowels constipated, tongue dry, furred, brown and rough like sandpaper. Quinin arrested the paroxysm and relieved the pulse and temperature. Urine contained bile but no albumin. A.M., pulse 94, 65, 67, 80; respiration 31, 22, 22, 20; temperature 100, 96.3, 98.7, 96.6. P.M., pulse 96, 75, 90, 64, 70; respiration 38, 28, 27, 23, 22; temperature 101, 103.6, 103.2, 98, 97.5.

Chronic malarial poisoning. L. Meyer. Entered Charity Hospital Oct. 3, 1873. Had been sick with chills and fever for two months before entrance into hospital. Entered in a state resembling congestive chill; delirious; rapid, feeble pulse. Disease arrested by quinin. Observations began October 8 and 9. Patient ordered quinin. A.M., pulse, 55, 50, 54; respiration 15, 15, 12; temperature 97.5, 97.8; 98.3. P.M., pulse 60, 61, 54, 53; respiration 18, 12, 15, 14; temperature 97.4, 98, 98.5, 99.

J. Kousben, age 30, native of Germany. Has resided in New Orleans three years. Occupation, brewer. Admitted Oct. 6, 1873. Sick for six days before entering hospital. Observations began on October 8. Entered with high fever, arrested by quinin. Tongue still furred; urine high colored but free from albumin. P.M., pulse 68, 72, 80, 78; respiration 18, 16, 15, 20; temperature 98.8, 98.5, 98.9, 99; P.M., pulse 76, 72, 72, 82, 74; respiration 18, 18, 16, 24, 20; temperature 97.4, 97.8, 99.4, 100.4, 94.

Remittent fever. R. Brethan, age 50, native of Germany, laborer. Resided in New Orleans three years. Had been sick for eight days with remittent fever. Entered with high fever; dry, rough, brown tongue. Urine red but free from albumin. Disease arrested by quinin, 20 grains every day. Recovered. A.M., pulse 74, 84, 66, 60, 68; respiration 18, 18, 17, 17; temperature 99.2, 100.2, 99.2, 99.6, 99.4; P.M., 76, 74, 68, 66,

70; respiration 20, 20, 22, 18, 18, 17; temperature 9872, 100.4 100.2, 100, 99.8, 99.7.

Remittent fever. Convalescence. G. Peifer, age 33, laborer, native of Germany. Sick fourteen days before entering hospital. Resided in New Orleans fifteen years. Admitted Oct. 7, 1873. Had fever and dry furred tongue at time of admission, with great prostration; urine free from albumin, Observations began on next day, October 8. Quinin admin, istered and with good effect. A.M., pulse 79, 74, 72, 68; respiration 15, 18, 16, 15; temperature 97, 98, 99.6, 98.8. P.M., pulse 96, 74, 72, 70. 66; respiration 18, 14, 15, 15, 14; temperature 98.3, 98.2, 98.5, 98.2, 99.1.

George Wilson, occupation wood chopper, age 20, native of New Orleans; attacked with dizziness, pain in head and fever Sept. 24, 1873. Entered Charity Hospital October 1. Complexion yellow, gums yellow, constipated, pain in epigastrium, brown furred tongue. Quinin arrested the fever. Observations began October 8, A.M., pulse 72, 71, 62; respiration 22, 23, 20; temperature 99.5, 97.5, 98.6. P.M., pulse 78, 67, 61, 66; respiration 22, 22, 22, 22; temperature 98.2, 98, 97.8, 98.5.

Remittent fever. F. McKenna, age 35, native of England, laborer. Attacked five days before entering hospital. Has resided in America one year; in New Orleans six weeks. Has been working on dredge boat. Admitted to Charity Hospital Oct. 13, 1873. On admission, high fever, brown, dry tongue. Observations began October 16, while patient was under the influence of quinin and he perspired freely. Quinin 15 to 20 grains daily. No albumin in urine. Discharged October 20. A.M., pulse 74, 62, 60, 57, 54; respiration 22. 14, 16. 18, 16; temperature 103.8, 99.4, 99.3, 97.25, 98. P.M., pulse 89, 60, 61, 56; respiration 22, 16, 18, 20; temperature 103.2, 90, 95.5, 99.

James Topliff, native of New York, age 30, clerk. Admitted Oct. 10, 1873. Resided in city one week. Disease remittent fever. Taken sick October 9. Urine light colored, no albumin. October 11, high fever, vomited green bile. Bowels opened with mercurials and fever treated with quinin, 15 to 30 grains daily. Observations began October 11. Discharged cured October 24. A.M., pulse 84, 72, 64, 88, 82, 60; respiration 14, 16, 16, 18, 20, 18; temperature 101.5, 100.7, 101, 103.1, 102, 98.4. P.M., pulse 80, 72, 72, 94, 78, 60; respiration 16, 18, 17, 24, 14, 20; temperature 101.8, 101, 101.4, 105.7, 99, 98.4.

Remittent fever. John Gilmore, age 24, admitted to Charity Hospital Sept. 30, 1873. Had been sick two weeks before admission to hospital. Native of Ireland; has resided in Louisiana three years. Urine free from albumin. October 13 had a paroxysm of fever, which was arrested by quinin. Discharged October 27. A.M., pulse 100; respiration 22; temperature 104.8. P.M., pulse 96; respiration 22; temperature 103.8.

Remittent fever. George Letz, age 40, German; resided in New Orleans five years. Entered Charity Hospital September 29. Sick four or five days before entering hospital. October 3 had a paroxysm of fever. Quinin arrested the fever and reduced the pulse. A.M., pulse 82; respiration 22; temperature 102.4. P.M., pulse 90; respiration 26; temperature 104.5.

Remittent fever. J. Dudley, age 24, native of New Orleans. Has had malarial fever for three consecutive seasons. Has been working on a plantation on the Bayou Têche. Entered October 24. Observations began October 31. Very obstinate case. Quinin finally arrested the disease. No albumin in urine. Improved on quinin and iron. A.M., pulse 86, 76, 78 98, 92, 92, 82, 70, 80, 76, 84, 84, 83; respiration 20, 20, 18, 25, 20, 16, 20, 16, 20, 20, 16, 22, 23; temperature 102.3, 99, 100.6, 101.5, 102.7, 102, 102.7, 100.5, 101, 102.5, 101, 102. P.M., pulse 84, 92, 78, 98, 98, 86, 82, 84, 92, 88, 87, 86; respiration 20, 20, 18, 25, 20, 24, 20, 16, 16, 20, 19, 20; temperature 101.4, 101, 100.8, 101.5, 102.5, 102. 102.7, 101, 102.5, 100, 102.

Chas Schmidt, age 42, native of Austria. Has had yellow fever. Entered Charity Hospital and observations begun Oct. 23, 1873. No albumin in urine; delirious; tongue red at tip and edges, dark brown in the center. Pain in head, bones and epigastrium. Discharged October 31. A.M., pulse 120, 78, 88, 80, 64, 66, 58, 68; respiration 46, 24, 30, 27. 22, 20, 18, 28; temperature 105, 99.2, 104, 100, 98.5, 97, 98.4, 98. P.M., pulse 110, 98, 84, 66, 64, 52, 62; respiration 30, 35, 28, 25, 22, 24, 20; temperature 103.9, 103.5, 103.5, 99.1, 97.5, 97.8, 97, 99.1.

Chronic malarial poison. Remittent fever. Charles Tinbers. age 21, native of France. Has been in New Orleans six weeks; sick two months before entering. October 2, had chill followed by fever. Severe headache, restless, pale and anemic. Urine red and free from albumin. Treated with full doses of quinin. Disease arrested November 5. Bile in urine; no albumin; specific gravity 1025. A.M., pulse 90, 88, 74, 72; respiration 22, 25, 18, 16; temperature 103.8, 100, 101, 101.2, 98, 98.2. P.M., pulse 108, 92, 90, 80; respiration 44, 26, 24, 19; temperature 100.5, 98.4, 100.8, 98.

Intermittent fever. John Gilmore, native of Ireland. Entered Oct. 30, 1893. Had chills and fever five days before entering hospital. October 31, when record of pulse and temperature was begun, had a chill at 100 degrees, followed by high fever, and at 7 P.M. the temperature was 106 degrees, pulse 108, respiration 24. Sulphate of quinia was freely administered and the fever ceased November 13 and did not return. This was a clear uncomplicated case of intermittent fever. A.M., pulse 72, 73, 74, 80; respiration 18, 20, 22, 18; temperature 99.5, 100.4. 100.8, 98.8. P.M., pulse 104. 79, 72, 74; respiration 24, 23, 18, 18; temperature 106, 101, 100.6, 98.

Intermittent fever. Michael Dolan. Sick one week before entering hospital, Oct. 23, 1873. Observations begun October 26; general appearance anemic, pain in epigastrium. Had fever on 23, when entering. Quinin freely administered, arrested the fever. A.M., pulse 60, 54, 48, 52, 52, 50, 60, 54, 58; respiration 28, 24, 26, 20, 24, 24, 19, 18, 19; temperature 98.5, 98, 98.5, 98, 98.8, 98.6, 97, 98, 98. P.M., pulse 52, 52, 46, 48, 52, 56, 55, 52; respiration 24, 22, 30, 20, 24, 24, 24, 18; temperature 96, 98, 98.2, 99, 99.5, 99.2, 100, 98.5.

In many severe and fatal cases of yellow fever the respiration is often greatly accelerated, as in the following case which entered Charity Hospital Oct. 10, 1873. Had been sick for five days. At 6 P.M., shortly after entrance, pulse 84, respiration 48, temperature 102.4. Patient delirious, restless and vomiting black vomit; suppression of urine. Died next morning at 8 o'clock.

(To be continued.)

PERITONEAL SUPPORTS—(LIGAMENTUM PERITONEI.)

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(Continued from page 546.)

It is likely that the meshwork of perforations in the great omentum is due to the arrangement of the blood vessel and an atrophy of the intervening space. In the horse the mesentery becomes thin and occasionally, Dr. Baker informs me, that a strangulated loop of intestine is found protruding through the perforated mesentery. In the dog I have found very thin, transparent areas, but never a perforation of the mesentery.

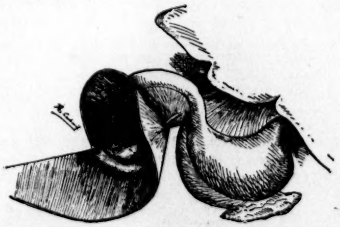

FIG. 7—Shows the continuation of the different portions of the mesentery, (after Perignon).

A noticeable feature in the structure of the mesentery in general is the accumulation of fat. The fat formation is more apparent in animals than in man. Typical samples may be observed in the sheep or especially in the dog. The fat accumulates along the blood vessels and is in many animals quite ornamentally arranged in the great omentum. The color of the fat is white or yellow. In young fatting animals it is apt to be white, but senility increases the yellow color. In very early embryos no fat can be seen, even with a strong lens. Small accumulations

of fat may be observed in embryos in the last of the fourth month and afterward in limited quantities. It, however, does not readily accumulate until the last two months of pregnancy, when the infant, in general, acquires fat. The fat lobules are contained in the fibrous meshwork of the membrana mesenterii propria. The fat mainly accumulates at the base of the mesentery. In some cadavers the great omentum will reach, in places, three-fourths of an inch thick and covers the whole visceral organs from view like a thick quilt. In some cases on which I have performed laparotomy there was a mighty omentum which buried all viscera beneath it—and this is a great protector against general infective invasion of the peritoneum. Fat exists in the mesenteries in accordance with the conditions of the body elsewhere. Mesenteric fat appears and disappears with fat in the other portions of the body.

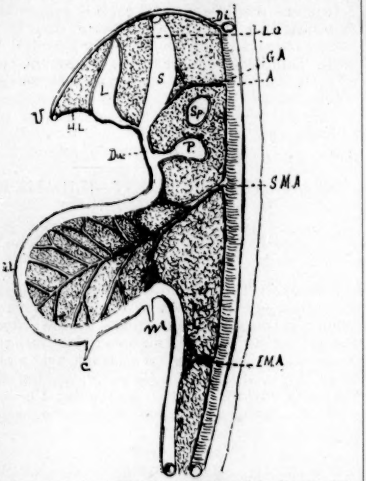

Fig. 8—Represents the three distinct divisions of the digestive tube each supplied by a distinct artery. S, stomach supplied by the gastric artery, G, A; G, L, the great intestinal loop supplied by the superior mesenteric artery, and I, M, A, the inferior mesenteric artery supplies the left half of the transverse colon and the descending colon; L, shows the growing liver; Sp, the spleen, and P, the pancreas; A, the aorta; C, cecum; M, Meckel's diverticulum; U, umbilicus; H, L, round ligament; L, O, lesser omentum.

A good view of the membrana mesenterii propria may be obtained by selecting a spare cadaver. After opening the abdomen, carefully tear off the epithelial layer from both sides of the mesentery. By a little patience one can easily peel off a thin layer of peritoneum from each side of the mesentery, whence will be left the mesenterii membrana propria, the middle layer of the mesentery, with all its essential structures—vessels, nerves, connective tissue and lymphatic glands. This middle layer may also be separated in two layers—one each side of the vessels and nerves. The layers seem to me not only to vary, from the amount of contained fat, but also that in a very spare individual much of the connective tissue is absorbed, and that with the regaining of the fat much more connective tissue reappears. The two layers of the membrana mesenterii propria decrease in size from the base of the mesentery up to the point of divergence to embrace the bowel. At its base it consists of a dense thick mass of connective tissue bundles inclosing the vessels and nerves. Its thickness and rigidity supports the viscera and maintains definite anatomic and physiologic relations. It must exercise considerable influence in the caliber of blood vessels which pass through its meshes and fibrous layers.

The lymph glands are not visible in the mesentery of very young embryos. Some state that the glands first appear in the fifth month of fetal life. They appear, according to Toldt, in the middle of the fifth month. The glands lie about the middle of the mesentery and do not seem to produce manifest changes. They lie in a series in the mesentery. In adult man there are some one hundred and fifty. In the lower animals the glands do not assume the scattered and diffuse condition of man but accumulate into a few larger ones. In some, there may be one very large gland, and none, or scarcely any visible small ones. These mesenteric glands are beautifully shown in a six months infant, dead from some wasting disease.

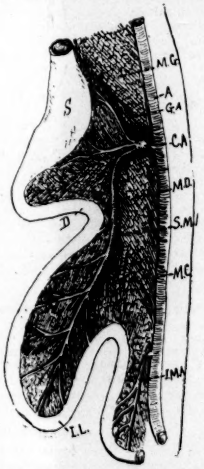

Fig. 9—Represents the mesentery suspending an advanced digestive tube. S, stomach; D, duodenum; S, M, A, superior mesenteric artery; I, L, intestinal loop; M, G, posterior mesogaster; C, A, cella axis; G, A, gastric artery; M, D, mesoduodenum; M, C, mesentery; I, M, A, inferior mesenteric artery; A, aorta. The mesentery, 3 divisions, with 3 arteries and divisions of the digestive tube, appear in this figure.

The two endothelial layers which cover the membrana mesenterii propria are very thin. One can separate them from the middle layer by careful dissection. These two thin serous layers consist of fibrous and elastic connective tissue covered by pavement or flat epithelium. The fibrous, elastic connective tissue which lies between the single epithelial layers and the membrana mesenterii propria does not have a specially definite arrangement for its fiber bundles. It connects the epithelial layer to the subserous beds of tissue. Toldt gives a simple layer of endothelial cells; immediately under the epithelium is a thin layer of fibrous connective tissue, mixed with fine elastic fibers; and an extremely delicate and loose subserous tissue which connects it to the membrana mesenterii propria. It may be observed that the

loose subserous tissue gives the shifting and sliding property to the serous layer. The peritoneum can glide on its soft elastic bed. Fat is rare in this serous layer.

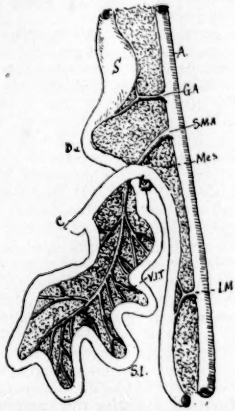

FIG. 10—Shows the mesentery with its three arteries and three parts of the digestive tract. The great intestinal loop, S, I, has rotated from left to right and the acquired mesenteries are beginning to arrive; the cecum, C, is on its travels to the right iliac fossa; the vasa intestini tenuis, V, I, T, now diverge to the left; Du, duodeum; A, aorta; G, A, gastric artery; Mes, mesentery; S, M, A, superior mesenteric artery; I, M, A, inferior mesenteric artery.

The mesentery is generally viewed as a double fold or duplication of peritoneum, and that as such it originated. But some authors think that the mesentery arose as an independent structure from the cells of the mesoderm adjacent to the vertebral column. The author who supports this view with the most originality, so far as we are aware, is Professor Toldt of Vienna. Toldt observes that nowhere in the development of the mesentery can one discover a process which can be indicated as a fold or duplicature. Nor can the formation of the primitive mesentery be looked upon as a passive extension of a peritoneal fold. Toldt says: "*Das Washstlumn der Gekröse ist Viel mehr ein ganz actives; es schnertet parallel mit dem Wachstum des Darmes fort und beide bedinger sich gegensertig.*" (The growth of the mesentery is moreover an active process; it progresses parallel with the growth of the intestine and each limits the other). The advocates of the theory that the mesentery is an independent growth, put forth the idea that not only the development but also the structure of the mesentery favors its correctness. The structure of the mesentery consists of blood vessels, nerves and lymphatics, and these being the fundamental structure of the mesentery it speaks against the view of peritoneal folds or duplicatures. The claim is that no simple fold or peritoneum would always contain such fundamental structures. The distinct difference between simple peritoneal folds and such structures as mesenteries consists in their contents. The constant presence of distinct vital elements is in favor of an independent origin of the mesentery from the mesoderm. The structures of the mesentery may be designated as subserous tissue. Another point which may be of aid in supporting the independent origin of the mesentery is that a part of the intestine loses its free mobility after early fetal development, as the duodenum, colon ascendens et descendens. The membrana mesenterii propria is the union of the vessels, nerves and lymphatics in a subperitoneal tissue.

Again, the theory of the independent origin of the mesentery may find support in the view that the great omentum has a similar histologic structure as the only primitive mesentery. The great omentum consists of a connective tissue layer covered on both sides with flat epithelial cells, exactly as the primitive mesentery was composed. The fibrous elements are relatively scarce the further one goes from the original mesenteric insertion line. However, the blood vessels are surrounded by fibrous bundles of connective tissue in the great omentum, but the quantity of fibrous bundles is more limited in distribution. It may be asserted that the connective tissue of the great omentum resembles and is analogous to the membrana mesenterii propria. So far as I am able to observe, this is a fact, but it is exceedingly thin, as Dr. Waite and I proved by actual observation on cadavers fitted for the work. The three theories as to the origin of the mesentery may be stated in short as: *a*, coalescence; *b*, displacement; *c*, independent origin from ridges of cells.

It may be stated in regard to the coalescence theory, that coalescence or union of surfaces by absorption on epithelial cells is at least not usual. The theory of displacement or readjustment is based on the fact that the viscera grew faster than their envelope, the peritoneum, and as far as the theory which attributes the origin of the mesentery to the heaped up ridges of mesoblastic cells situated on each side of the vertebral column, much may be said in its favor. The best sample to illustrate the displacement theory of the mesentery is that of the descending colon. The rapidly growing kidney pushes itself between the meso-colon-descendens and makes according to this view, the external layer of the meso-colon overlap the parietal layer; the folds disappear by coalescence of its epithelium. The advocates of this theory claim that a white line of coalescence can be found parallel to the descending colon, which, it is claimed, proves the correctness of the theory. Microscopic examination would not prove anything because after the coalescence there would be no epithelium left to tell the story of coalescence. This theory, which will be contested in the present work is also put forth in regard to the great omentum. The small pits and pockets found along the ascending and descending colons are referred to as proof of the coalescence theory. I have examined them and do not consider them due to formation of the mesentery by coalescence. I think they are due to old peritonitis. I have found such pockets which would admit the finger point, but sufficient evidence existed to demonstrate an ancient peritonitis. The displacement or readjustment theory of the mesentery has many points in its favor. It must be considered that the peritoneum and bowel develop, hand-in-hand. The peritoneum is an integral part of the viscera and grows with them. The essential condition of existing viscera is peritoneal covering. As the viscera grow irregularly the peritoneum will need readjustment. For example, the cecum grows rapidly while the appendix atrophies rapidly, hence here a vast readjustment of peritoneum is required and it is accomplished without a break in its surface. The typical readjustment or displacement of mesentery

is observed when the growing kidneys steal away and appropriate the meso-colon ascendens et descendens. When any viscus grows faster than its covering or faster than its adjacent neighbors, some form of readjustment or displacement must arise. It appears to me that the statement so generally made by writers that the change from primitive to secondary mesenteric insertions, as being wholly due to secondary coalescence is not all true, but that readjustment or displacement tells a large story. The mesentery may not be a conjoint visceral fold, but a neuro-vascular pedicle arising out of the collection of mesodermic cells situated immediately on each side of the notochord and finally becoming modified, being faced by epithelium.

It may be asked, Why is the mesentery inserted only on the dorsal wall? It is no doubt due to the immobility and rigidity of the dorso-abdominal wall. If the wall were movable no mesentery could insert itself. The liver and kidneys aid in immobilizing and fixing the mesentery. Whatever theory is held as to the development of the mesentery, this must be borne in mind, that the serous cavities are due to interstitial fluid pressure and independent action of the adjacent walls. Connected with visceral cavities are generally mesenteries, more or less complicated, whose insertions are on the most fixed walls.

The blood vessels of the mesentery are single large trunks at the roots. In fact, three blood vessels supply the whole digestive tract—the gastric supplies the stomach, the superior mesenteric supplies the whole of the small intestines, except the duodenum, and from the middle of the transverse colon to the cecum, and the inferior mesenteric artery which supplies the left half of the transverse and the descending colon. As the gastric reaches the stomach it divides, and supplies the smaller curvature and the esophagus. It does not make anatomic arches and loops. The superior mesenteric artery arises like the gastric as a single trunk, but it soon begins to branch. In early embryonic life, before intestinal rotation, the branches passed to the right, but after rotation the branches pass from the left side of the superior mesenteric artery. These branches, ten to fifteen in number, are designated the vasa intestinii tenuis. Shortly after the branches of the superior mesenteric artery pass off from the main trunk they begin to anastomose with each other, forming arches and loops. In the vasa intestinii tenuis, I have counted as many as five distinct series or rows of loops. The anatomic loops lessen in size as they approach the bowel and the artery rapidly lessens in caliber. The general number of anatomic loops is three or four, which wonderfully equalizes circulation for different sections of the digestive tube allowing unequal demands of blood. As the arterioles leave the anastomotic loops they run for a short distance parallel and on reaching the wall of the gut they bifurcate and encircle the bowel, making vascular rings. The vasa intestinii tenuis supplies the mesentery itself with its glands and nerves.

The superior mesenteric artery offers many variations. I have seen it give a branch to the liver. It may take the place of the inferior mesenteric, as it does in many lower vertebrates. It may give branches to the stomach and spleen. Its vasa intestinii tenuis may vary in number, size and loops. Hyrtle, in his "Lehrbuch," 17th Ed., 1884, describes a persistent amphalo-mesenteric artery. In this case it supplied the rectus abdominalis, anastomosing with the deep epigastric, and finally passed into the suspensory of the liver along the round ligament. By care and patience, one can dissect out almost the whole of the superior mesenteric artery in subjects prepared for the work.

The inferior mesenteric artery arises from the abdominal aorta about one and one-half inches above its bifurcation. It supplies the large bowel from the middle of the transverse colon to the anus. It forms anastomotic arches, similar to the superior mesenteric, but less in number and fewer in series. The inferior mesenteric artery may vary in its points of origin. It may be entirely displaced by the superior mesenteric artery. Some anatomists note that it may give off a middle colic. It has been noted to give off branches to each umbilical artery. Walsham writes that the anastomosis between the middle and left colic arteries may be wanting, as is the normal condition in the ruminants and porcupine. "Quain" announces that it may give branches to the liver and kidneys, and Hyrtl saw it arise from the common iliac. A peculiar point in regard to the inferior mesenteric artery is that it has close relations with the rectum whose veins anastomose with the portal veins. Hence, blood from the rectum can go directly to the liver by way of the portal vein. The portal vein collects blood from the digestive tube and carries it to the liver. Now it is observed by all who pay especial attention to the peritoneum and its development, that blood vessels make various projecting folds in its mesenteries. The vessels project the peritoneum into a ridge, and accompanying this ridge are found corresponding depressions. The arteries which are manifest in their production of ridges in the peritoneum are the ileo-colic which produces the plicæ ileocecalis, superior and inferior. The ileo-colic sinistra and sigmoidea produce wide depressions between the large branches and also among its sigmoid vascular arcades. I have noted depressions one and one-half to two inches in diameter and nearly two inches wide in the vascular arches of the sigmoid. One could push this sac-like pouch toward either side of the sigmoid mesentery. Such wide depressions might have been produced by pressure, *e. g.*, the rapidly growing kidney at its lower end, by its projecting against the sigmoid mesentery. The long sigmoid might have been displaced against some round projection, *e. g.*, against the liver, a coil of intestine or the bladder, when the sigmoid mesentery was very thin, yielding and distensible. The gastric artery makes a very prominent fold of peritoneum projecting into the lesser omental cavity. This is no doubt what Huschke tried to describe as the gastro-pancreatic ligament or omentum. In one adult which Dr. Waite and I carefully examined, the fold over the gastric artery projected more than an inch into the lesser omental cavity. This fold gave a distinct border to the foramen of Winslow on the left.

(To be continued.)

Ocular Diphtheria Treated by Antitoxin.—Dr. Coppez, in a Brussels medical journal had a good result in one case: "The membranes," he says, "seemed to melt like a snowflake in a ray of sunlight." It may reasonably be expected that the invading progress of pseudo-membranous exudation may be early checked by this treatment. "Or, better still," says Dastot, "the last two stages of the malady may be suppressed—with all the dangers that attend them." Twenty-four hours should see the subsidence of all menacing symptoms.

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SATURDAY, APRIL 20, 1895.

A PROPOSED STEP BACKWARD.

We are advised by a reliable authority that the College of Physicians and Surgeons of Baltimore, Md., have filed a proposed amendment to the constitution of the Association of American Colleges, which if adopted, would undo the good work accomplished at San Francisco, providing that graduates after 1898 shall have attended four courses of lectures, in different years, before receiving the degree of M.D. In view of the decided action taken upon this question by the AMERICAN MEDICAL ASSOCIATION at Detroit, and in fact since its organization, we feel it our duty to protest against the position taken by the Baltimore college. In this protest we believe we shall have the sympathy and support of 99 per cent. of the profession of America. There can be no doubt of the attitude of the profession to-day. This was well illustrated in the adoption of the RAUCH resolutions by the AMERICAN MEDICAL ASSOCIATION at Detroit, providing that parties holding diplomas of later date than 1890 must have attended at least four courses of lectures before receiving a degree, in order to secure membership in this ASSOCIATION. The resolution was adopted *unanimously*. The four-year amendment was adopted by the College Association at San Francisco by a vote of 17 to 5, and afterwards ratified by a unanimous vote. Minnesota has amended her medical law, requiring attendance upon four courses before admitting parties to an examination to begin practice. The Iowa Board of Health has adopted the four-year minimum of requirements, as well as several other States. The repeal of the San Francisco amendment will be far-reaching in its pernicious influences upon both the profession and the colleges. The present is a period of evolution in methods of medical education in this country; all signs pointing toward an immediate solution of higher medical education in the United States. We had hoped to be soon relieved of the repeated jibes of the foreign medical press, that have for years taunted us upon the question of medical education. The JOURNAL appeals to the colleges of the country to immediately carry into execution the provisions of the four-year course. A failure to do so will result in humiliation and disgrace. It is needless to discuss this question from a professional standpoint as the arguments are one-sided. Upon investigation it will be generally conceded that no valid argument can be afforded in favor of a repeal of the present provisions of the College Association calling for attendance upon four courses of lectures before conferring the degree of M.D.

We can not believe that the better judgment of the College Association will permit this backward move; and as the statistics show that the colleges of the highest requirements are now having the largest and best classes, we think the matter of self-interest will have a powerful bearing in preventing such a catastrophe.

INSANITY AND LUNACY IN MASSACHUSETTS.

The statutes of Massachusetts are not clear in their use of words applicable to mental disease. They have, for example, provided for the treatment of the insane charges of the State at "Hospitals for the Insane" at Danvers, Northampton, Taunton, Westborough and Worcester. But they are under the government of a State Board of Lunacy. The hospitals are models of their kind and the State Board is a hard-working and efficient body, but the latter has not yet found its way clear to shake off the archaic name. The full title of this Board is "the State Board of Lunacy and Charity." Its membership is nine, and its members serve without salary. Its powers and duties are vast and far-reaching. In addition to the insane class, it has to do with almshouses, the State farm, three State schools, juvenile offenders, the boarding out of infants and other minor wards, non-settled paupers, pauper statistics, bastardy among the unsettled, immigrants falling into distress during their first year, and visiting the sick poor. The visitation of young girls boarded out in families, is conducted by eighty-one carefully selected lady visitors who reside near enough to their wards, to be cognizant of their needs and the manner of treatment; these ladies receive no salary. The board has been in existence about sixteen years, in which time there have been only thirty appointments, only two deaths and only nineteen resignations. It speaks creditably for a non-salaried board to show an average resignation list of only one and a fraction per annum.

THE ADVANCE OF LABORATORY WORK IN AMERICA.

When LISTER visited the United States in 1876, and spoke on the subject of antisepsis at the International Medical Congress, there was no bacteriologic laboratory in this country. The impetus given to bacteriologic studies by the practical needs of surgery was first felt in Europe, but although there were many in the field, it was not until the improved methods of laboratory technique had demonstrated bacillus tuberculosis, and the comma bacillus, that the immense practical value of this department of science dawned on the medical world. America was fully aroused and almost simultaneously there sprung into existence laboratories in connection with Harvard, Johns Hopkins, the Hoagland in Brooklyn, the Carnegie, the Loomis, the Chicago Medical College and the Universities of Pennsylvania, and Michigan, and the medical colleges throughout the United States soon found it necessary to give instruction in bacteriology and to provide suitable equipment therefor.

Naturally, independent investigators were developed by the new and interesting fields of discovery that opened before the vision of the enthusiastic workers. STERNBERG of the Army, WELCH of Johns Hopkins, PRUDDEN and BIGGS of New York, BELFIELD of Chicago, COUNSELMAN and SHAKESPEARE were among the earlier of the observers.

Europe, in advance in the original discovery, again led in the new chemic departure made necessary by the investigations of METSCHNIKOFF and his colleagues, showing the life history of bacteria, and the pathologic changes produced by the microbic products. American bacteriologists in general were not well prepared for this chemic phase of the subject, but the name of VICTOR C. VAUGHAN stands pre-eminent among the first of our bacteriologic chemists. He was well prepared for this work, by his discovery of the tyrotoxicon and other ptomaines. To-day it is fair to assume that organic chemistry and bacteriology are as well understood in America as in Europe, and that there are a dozen laboratories in which any experiment made in Europe, may be tested with scientific exactness.

Nor is the work of our American laboratories merely imitative. We have passed beyond that stage and the original work of STERNBERG, KINYOUN, THEOBALD SMITH, CHITTENDEN, COUNSELMAN, ERNST, EINHORN, OHLMACHER, ABBOTT, MCCLINTOCK, LONG, GEHRMAN and others, is as closely watched in Europe, as we ourselves watch the European observers.

In the field of chemic researches in our laboratories outside of bacteriology, we have had many observers, but none who have conducted to a conclusion more painstaking investigations in physiologic chemistry and in pathologic substances than JOSEPH JONES, of New Orleans. We can not undertake to mention all of the distinguished American workers in the wider field of general chemistry, such as SMART, of the Army, REMSEN, of Baltimore, HAINES, of Chicago, but in that field we may point with pride to a long list of expert chemists, and we venture to predict that before the end of a decade, the leadership in laboratory work will be held in the United States. Even as we write, there are more independent original investigators in Chicago alone than there were in the whole United States a decade ago.

The Vermont Microscopical Association announced recently that a prize of $250 will be given by the well-known chemists, Wells & Richardson Company, to the first discoverer of a new pathogenic germ. We shall be disappointed if this prize is not awarded to one of our countrymen. C. SMITH BOYNTON, M.D., of Burlington, Vermont, will furnish any information concerning this prize, on application.

THE NOMENCLATURE AND CLASSIFICATION OF DISEASES IN THE NAVY.

In our issue of March 23, we published the new official nomenclature and classification of diseases and injuries, directed to be used hereafter by the medical officers of the Army by order of the Surgeon-General, promulgated in Circular No. 3 of March, 1895. It is interesting to compare this with the nomenclature and classification which went into effect on January 1, of this year in the Medical Department of the Navy, by order of the Surgeon-General of the Navy, issued some months before, which we print in this issue.

The naval classification preserves the technical Latin and Greek nosological titles, carefully revised on the ground of facilitating statistical comparison with similar returns by foreign services. The Army system employs English, Latin and Greek designations indiscriminately. Thus, glycosuria, gout and scurvy appear among Army titles, the corresponding Navy names being diabetes, lithemia and scorbutus. Instead of measles and rötheln in the general infectious class of the Army, the Navy has morbilli and rubella.

There are 330 titles on the Navy list against 249 in the Army, but as 19 of the latter are duplicated, appearing under different classes, and as 12 numbers are given to the expression, "other diseases of this class," there are really only 218 specified diseases and injuries in the Army nomenclature.

Class I, Parasites and Parasitic Diseases of the Navy list has not been retained by the Army, trichinosis being classed by the latter with the general infections and scabies and the dermatophyta with local infections. Carcinoma and sarcoma are placed among general infectious diseases in the Army list, and appear among cysts and new growths, Class XII, Navy list.

Venereal diseases, which the Army retains among the general infections, are transferred by the Navy to Class XI, entitled venereal diseases and diseases of the genito-urinary apparatus.

Debilitas senilis, hemophilia, purpura hemorrhagica and purpura simplex in the Naval Class III, of constitutional diseases of nutrition are not enumerated in the Army Class II, diseases of nutrition, general.

The several classes: IV, Diseases of the Nervous System; V, of the visual apparatus; VI, of the auditory apparatus; VII, of the olfactory apparatus; VIII, of the nutritive apparatus, with subsidiary classes 1, of the Digestive Apparatus; 2, of the Circulatory Apparatus—*A*, Blood Vessels; *B*, Lymphatics; 3, of the Respiratory Apparatus. IX, of the Motory Apparatus; X, of the Cutaneous Apparatus; XI, Venereal Diseases and Diseases of the Genito-Urinary Apparatus are all included by the Army in one general Class III, Structural and Functional Diseases of Organs, under the subordinate heads: *A*, Diseases of the Nervous System; *B*, of the Digestive System; *C*, of the Circulatory System; *D*, of the Respiratory Organs; *E*, of the Genito-Urinary System; *F*, of the Lymphatic System and Ductless Glands; *G*, of the Muscles, Bones and Joints; *H*, of the Integument and subcutaneous Connective Tissue; *I*, of Organs of Special Sense; (*a*) of the Eye, (*b*) of the Ear, (*c*) of the Nose.

Accidents and Injuries IV, and Unclassified, V, complete the Army classification, while the Navy has XII, Cysts and New Growths; XIII, Injuries; XIV, Extraneous Bodies; XV, Poisons; and XVI, Feigned Diseases.

A few other minor differences between the two may be indicated. Thus, nostalgia appears among diseases of the nervous system (Army) but it is not specified in the Navy, and directed to be included under the title, melancholia. Nausea marina, for which it is to be regretted the more exact title naupathia, has not been substituted, is classified with diseases of the nervous system by the Navy, and rabies with general infections, neither appearing in the Army classification. Insolation among general injuries (Army) is more appropriately classed as febris thermica and prostatio thermica among diseases of the nervous system (Navy), along with febris continua simplex and febris ephemera, which have no place on the Army list, except among fevers of undetermined causation in Class I, General Infectious Diseases. On the other hand, the Army places narcotic poisoning, acute and narcotic poisoning, chronic or drug habit among diseases of the nervous system, while they are not mentioned in the Navy list, but would by analogy be reported among other diseases of Class XV, Poisons. Cholera morbus and dysentery are classed as diseases of the digestive system (Army) and among general infectious diseases (Navy). Cardiac irritability and cardiac degenerations are enumerated among diseases of the circulatory system (Army) and not mentioned on the Navy list. Anthrax appears among the general infections and carbuncle among the local infections (Army), and carbunculus only among diseases of the cutaneous apparatus (Navy). There are twenty-nine diseases of the visual apparatus specified on the Navy list and but fifteen diseases of the eye on the Army list. The classification of neither Service includes herpes zoster and ulcus perforans, although the nervous origin of both diseases which are of frequent occurrence is well-established.

The Marine-Hospital Service has for many years followed literally the nomenclature of the Royal College of Physicians of London, a revision of which is now due.

COLLECTIVE INVESTIGATION OF THE ANTITOXIN TREATMENT OF DIPHTHERIA.

When PROFESSOR VIRCHOW—repudiating the attack of his assistant, DR. HAUSEMANN, on BEHRING'S theory of the serum treatment of diphtheria—said: "All theoretical considerations must give way to the brute force of these figures," referring to the statistics of the treatment in the Kaiser and Kaiserin Friedrich Hospital of Berlin, the question seemed to be settled as to the general merits of sero-therapy. During a given period 533 cases of diphtheria were treated in this hospital; of these 303 were treated with the serum, with a mortality rate of 13.2 per cent.; 230 were treated without serum, with a mortality rate of 47.8 per cent. A still more striking exhibit was afforded during June and July, when nearly all cases were treated with the serum and the mortality rate was 12.7 per cent. "Suddenly," says VIRCHOW, "the supply of serum ceased, as, unfortunately, the very horses from which the serum was taken died. The old methods of treatment had again to be resorted to and the results were"—109 cases, 55 deaths in seven weeks, a mortality rate of 50.46 per cent. A supply of serum was then obtained from another source, and during the next six weeks 81 cases were treated with 12 deaths, a mortality rate of 14.81 per cent. It was the "brute force of these figures" which VIRCHOW said compelled him to recommend the serum; to attribute to it "a brilliant therapeutic virtue;" to contend that, even if disagreeable by-effects were proved to occur occasionally, they were not sufficient to deter him from continuing the treatment; and to counsel that the theoretical explanation of its therapeutic action should be left to the future rather than allow the failure of such explanation to interfere with its practical application.

Since then, however, these and similar figures which seemed so convincing have been rudely assailed.

Among the most recent of the assailants is DR. JOSEPH E. WINTERS, of New York City, of whom the *Medical Journal* says: "Nobody who knows the medical profession of New York can question DR. WINTERS' astuteness as a clinician and we do not conceive it to be possible to bring up any circumstance or condition that may reasonably be held to have tended to warp his judgment in this matter." At a recent meeting of the New York Academy of Medicine (April 3) DR. WINTERS, discussing the papers presented on diphtheria and the antitoxin by DRS. HERMANN A. BIGGS, W. H. PARK, C. H. PECK, GEORGE P. BIGGS and IRA VON GIESEN, sweepingly challenged every claim made for sero-therapy, attacked the favorable statistics and alleged a number of serious after-effects due to antitoxin septicemia. In an experience of 154 cases treated during January, February and March, 1895, in the Willard Parker Hospital he asserted he had never found that the serum exerted the slightest influence for good on a single clinical manifestation —on membrane, pulse, temperature, gland swelling, laryngeal symptoms, etc. "Every one of these patients had been examined daily; they had been examined with care and with great solicitude and with the desire to discover some evidence of the virtues ascribed to antitoxin by others." He further opposed antitoxin on account of its "immediate danger to life through its influence on the kidneys and on the nervous system and remotely through its influence on the blood"—basing this last charge, apparently, on the destructive action of horses' serum on the red globules, as reported by L. LANDOIS and others.

Again: PASSED ASSISTANT SURGEON CORDEIRO, U. S. N., has just reported to the Surgeon-General of the Navy the results of his study of the use of antitoxin in the Berlin hospitals, and concludes that "so far, proof is lacking of the value of antitoxin in the treatment of diphtheria;" he adopts the adverse opinions of KASSOWITZ who says: "The burden of proof lies with BEHRING and his co-workers. The world will eagerly and only too willingly receive this proof. We know that the former extravagant promises are out of the question, but we should be grateful to have it demonstrated that the serum can reduce the mortality by even 1 per cent. As yet we have not the slightest basis on which to found an expectation that fewer children will die in the future of this disease on account of the serum treatment."

In this conflict of opinion there is, obviously, an urgent necessity for the collected and collated experience of the profession, and the JOURNAL offers itself as the medium for the collection of this experience. Following the last page of reading matter in this issue, will be found a blank form for reports of cases of diphtheria, treated either in hospital or private practice. In order to facilitate comparison with the experience in other countries, this form has been prepared in close accord with that now in use in Germany for the collective investigation undertaken by the *Deutsche Medicinische Wochenschrift*.[1] This blank form is believed to be self-explanatory; it may be detached without mutilating the rest of the number; and it is hoped that all members of the AMERICAN MEDICAL ASSOCIATION who have had or may have any experience in the antitoxin treatment will contribute to this attempt to settle the question of its merits.

SECTION ON BENEVOLENCE.

Our friend DR. FREDERICK HORNER, U. S. N., retired, writes us concerning the plan he has often urged, whereby a fund may be created for the relief of widows and orphans of medical men. He urges the establishment of a "Section on Benevolence" or "Medical Aid Section," reference to which was made in the JOURNAL for May 16, 1891, and April 16, 1892.

It is understood that our President, DOCTOR MACLEAN, will this year favor the matter, and ask that the initial steps be taken for inaugurating the measure.

By a resolution of the ASSOCIATION, passed at Washington in May, 1891, a committee was authorized to be appointed on the subject, but it appears that no report was made, although the exhaustive paper of DOCTOR HORNER (see JOURNAL, April 16, 1892, p. 482) might very well answer such a purpose.

We sincerely hope some definite action may be taken at the Baltimore meeting, which will result in the establishment of some such section.

THE JOURNAL TRAIN from *Chicago* for *Baltimore*, Sunday, May 5, 3:15 P.M., *via* Pennsylvania Railroad, is a *special* train, exclusively for the use of the members of the ASSOCIATION and their friends. It goes direct to the place of meeting, on limited time and with the finest train service in America. There is but one JOURNAL train, and that is *via* the Pennsylvania R. R.

PAPERS READ IN THE SECTIONS.—Members are respectfully reminded that papers read before the Sections become the exclusive property of the ASSOCIATION.

CORRESPONDENCE.

Shall Ingenuity and Invention be Discredited Among Physicians?

DENVER, COLO., April 9, 1895.

To the Editor:—The above is practically one of the important questions which should have been decided at last year's meeting in San Francisco. Could it have come to the surface so as to have been voted on separately, the indications were then that the proposition to change the Code in this particular would have carried by a large majority. Happily, Dr. Quimby, of New Jersey, put in an amendment, separately from all others proposed, which brings this question

[1] The JOURNAL is indebted to the courtesy of DR. JULIUS SCHWALBE, one of the editors of the *Wochenschrift*, for a copy of the return blank.

squarely before the Baltimore meeting. Dr. Quimby's motion is to "change the Code of Ethics—Duties for the Support of Professional Character—by leaving out the words 'Surgical Instruments,' in second line, Clause 5, Article I."

To spare the precious time of the meeting and to "hedge" against the possibility of my not being able to be present when this question comes up, please allow me to give a few reasons why this change should certainly be made, and the mechanical device or "surgical instrument" be forever divorced from the low company of "a secret nostrum."

As a preliminary let me observe, with all due respect for our professional grandmothers who framed the Code and Constitution of the AMERICAN MEDICAL ASSOCIATION, that the horizon of their vision of the possibilities of invention must have been rather narrow. The conditions were so different then from what they are now. Then, with few inventions made by medical men, and few patents issued to anybody, there was no need apparent to protect any physician in his right to be honored as the originator of anything. Now there is every need, and the Patent Office is the only reliable criterion by which to decide if a man has even made an original invention. To require that a man should prove his title and then deprive him of the only means of so doing reminds one of that old college song:

> "Mother, may I go to swim?"
> "Yes, my darling daughter;
> Hang your clothes on a hickory limb,
> But don't go near the water."

The question is not whether it will pay for a physician to take out a patent on an invention. Judging by the forty-five thousand or more patents already allowed in the United States, and only one in fifteen a financial success, it would probably not pay, and the applicant would have a "heap of bother" and considerable expense in return for the establishment of his own originality and a possible service he may do his fellow men.

Briefly stated, the arguments which seem to me sufficient to warrant this proposed change in the Code are:

1. That the intrusion of the words "surgical instruments" is uncalled for and without good excuse. It is out of harmony with the rest of the paragraph, *for there is no fraud or secrecy to be avoided*, as implied with regard to "secret nostrums." The latter are generally known to be cheats, while the former bear "upon their face" their evidence of worth and fitness.

2. The interdiction of "surgical instruments," and by implication probably(?) mechanical devices, is wrong, because the Patent Office furnishes the only reliable proof that a claimant is entitled to credit.

3. The sacrifice in time, thought and expenditure required of a physician is really a *damage* to the medical profession, not to mention the deprivation to those who depend upon our aid, because many new things must be made, if at all cheaply, by dies and machinery, and manufacturers will demand protection for their own outlay. Especially is this the case with all hard rubber goods which have to be made in expensive molds.

4. The restriction imposed is *unjust* to the physician inventor, because he (co-equal with an outsider) ought to have the stimulus of credit and profit, if there is any, in order to make a success of his invention. The field is the world, and after all the great test of merit is extended use, and the sources of profit must be massed and under rightful control in order to secure such introduction to supply demand. The writer could illustrate this point by the failure of meritorious, mechanical, surgical inventions which have come short of recognition and use because of the lack of properly sanctioned pushing of their undoubted claims upon the attention of those who should employ them. Again he could illustrate a point taken (3) by stating that he has lately been requested to indorse a poor make of his stethoscope, with which it is proposed to undersell the market, and calculated to bring discredit upon an instrument the utility of which, when properly made is unquestioned. And now when he is just finishing an improved stethoscope, made on similar but new lines and measurements, he is warned that he must secure the same by patent, or So-and-So—manufacturers—will cheapen the thing to capture the trade, regardless of his wishes to hold the instrument to an even grade of excellence. What shall be done under such circumstances? Shall the author take the advice given him by two ex-Presidents of the AMERICAN MEDICAL ASSOCIATION and get behind a surgical instrument company who will seek protection from the Government for him? or shall he be open-handed and boldly announce that his own rights in the matter are just the same as those of any citizen of the United States, even though he *is* a member of the AMERICAN MEDICAL ASSOCIATION?

The best way is to change the blamed paragraph and make it read as though a sane man had originally written it.

Yours respectfully, CHARLES DENISON, M.D.

The Judicial Council.

PHILADELPHIA, April 10, 1895.

To the Editor:—The JOURNAL of the 6th inst. contains a criticism of the circular, relative to advertisements, recently sent to all members of the AMERICAN MEDICAL ASSOCIATION by the Philadelphia County Medical Society. In the criticism occurs a personal allusion which impels me to request the publication of this letter. The JOURNAL says: "There are two direct mis-statements in the committee's report which we are sure they will be glad to have corrected; one is that the decision of the Judicial Council was not given to them or published. We notice that Dr. John B. Roberts has signed this document, and that he was also Secretary of the Judicial Council. If he failed to notify his associates on the committee of the action of the Council surely the JOURNAL is not to blame."

It is true that I was a delegate of the Philadelphia County Medical Society to the meeting of the AMERICAN MEDICAL ASSOCIATION at San Francisco, and therefore signed the report made by the delegation after its return to Philadelphia. It is also a fact that I was and am the Secretary of the Judicial Council of the ASSOCIATION.

The circumstance that I held the two positions and *could* have disclosed the decision of the Judicial Council to my associates of the delegation, seems to the JOURNAL a sufficient reason for supposing that I *would* do so. Such a betrayal of official confidence would, in my opinion, make me unworthy to be a member of the Council.

As Secretary, I was directed to furnish the Board of Trustees with a copy of the decision in regard to the publication in the JOURNAL of advertisements of secret preparations. I did this immediately, on June 8, 1894. I was not at liberty to inform any one else, outside of the membership of the Council, not even those who brought the charges against the Trustees. I therefore have refrained from doing so.

You will remember that I declined to be present during the executive sessions of the Judicial Council at which the question was considered, because of my official connection with the Society bringing the charges. After the decision of the Council had been made, I returned to the room and resumed the duties of Secretary, which during my absences had been performed by Dr. X. C. Scott, and Dr. T. D. Crothers respectively acting as Secretary *pro tempore*.

Yours truly, JOHN B. ROBERTS, M.D.

ANSWER:—The *decisions* of the Judicial Council are not secret. The *proceedings* are secret, but not the *decisions*. The copy sent the Trustees was signed by Dr. Roberts.

Mountain Air for Cities.

MILTON, KY., April 15, 1895.

To the Editor:—The details of the plan which I suggested in the JOURNAL of March 30, for supplying pure air to cities are as follows: Upon a sufficient foundation is a frame thirty feet high, within which is an elevator running to top of frame, for the purpose of raising the perpendicular sections of steel plate pipes, each of which is twenty feet long, and each one is larger than the one above it, to which it is securely bolted, and also of heavier plate. When the first two joints are securely joined at the top of frame they are elevated until another is added and so on until the first attains the desired height. Guys are attached and are so arranged as to maintain the pipe perpendicularly.

Electric lights could be attached to the top of the pipe, and being at an elevation of six hundred feet would be at least quite conspicuous.

The lower end of the pipe is attached to the cylinder of a pump which draws the air down through the pipe and forces it through the supply pipes to the desired apartments. These rooms should be practically air-tight except the ventilator at the lower, and the supply pipe at the upper part of the room. The air from an altitude of six hundred feet, being so much lighter than the impure air at the surface of the earth would force the latter out of the room, the temperature of which could be regulated by passing the supply pipes through either cold or hot media. A room thus furnished and covered with glass would be an ideal mountain resort.

It is believed by some that pathogenic microörganisms, other than the tubercle bacillus, play an important part in the destruction of lung tissue. In view of the facts that during sleep the vital resistance of the system is greatly lessened and that the air in all large cities contains innumerable hosts of ferocious pathogenic microbes, the wonder is that there not more pale, wan faces in cities, or even that there should be any one left to tell the tale.

It is even hinted that the tubercle bacillus alone is unable to cope with the vital resistance of the system. Hence we send our consumptives to a high dry location for pure air. But with my plan a high dry location with absolutely pure air is sent to our consumptives.

Not only the apartments for invalids but also factories, business offices, store rooms, etc., could have the mountain air, simply by making the upper part of the rooms air-tight.

I have thus briefly outlined the plan for supplying cities with pure air of any desired temperature at a trifling cost compared with the benefits to be derived, and I hope to see Chicago—the wonder of the nineteenth century—take the lead in making a test of its practicability.

S. E. HAMPTON, M.D.

Quis Custodiet Ipsos Custodes?

CHICAGO, April 13, 1895.

To the Editor:—At a meeting of the faculty of the Northwestern University Woman's Medical School, the following resolutions were unanimously adopted and ordered to be placed before the Illinois State Board of Health:

WHEREAS, On three occasions within the past three years, the Illinois State Board of Health has licensed to practice medicine in this State, students who have not properly qualified themselves for such duties, and whose incompetence has compelled us to withhold the degree of Doctor of Medicine; and

WHEREAS, By common report we are informed that the State Board has adopted a similar policy with reference to numerous other persons; therefore,

Resolved, By the faculty of the Northwestern University Woman's Medical School that the State Board be requested hereafter to make its examinations so rigid that persons incompetent to obtain the degree of Doctor of Medicine from first class medical colleges can not obtain license to practice from the Illinois State Board of Health.

Resolved, That the State Board of Health be urged to do all in its power to secure a modification of the State law, so that the privilege of examination for license to practice in this State can only be obtained by graduates of recognized medical schools in good standing.

Resolved, That for the protection of the lives and health of our people, we believe it the duty of the State Board of Health to do all in its power to prevent the entrance into the medical profession in this State of any persons not properly qualified; and further

Resolved, That in the interests of humanity and medical science we believe the State Board should make its standard of qualifications as high as that of the best medical colleges in this country, and that it should do all in its power to aid and encourage the efforts of the profession and the people for thorough medical education and higher requirements of licentiates and for the degree of Doctor of Medicine.

MARIE J. MERGLER, Secretary.

Shall the Physician Act as Clerk for an Insurance Company without Pay?

STOUGHTON, WIS., April 11, 1895.

To the Editor:—I inclose a copy of a letter I wrote to the Wisconsin Benevolent Association which is self-explanatory:

Wisconsin Benevolent Association, Milwaukee, Wis.

Gentlemen:—Your letter of the 11th inst. at hand. Your statement does not in the least alter the position I have taken.

I filled out the blank sent to the patient, giving my diagnosis, number of visits, date of first and last visits, the time patient was confined to the house, etc. This is about all that is required of the attending physician, without compensation, by any legitimate accident insurance company and is amply sufficient to establish the justice of the claim so far as the testimony of the attending physician is concerned.

The filling out of a complicated blank, such as you inclose, requires time and technical skill, is exclusively for your benefit, and is not under any consideration justly chargeable to the patient. The patient has paid you for the insurance; he has also paid me for the medical services rendered during his recent illness. It is therefore manifestly unjust, even if it were possible, to collect from him an additional fee for an examination and written report which is solely for your benefit. It is impossible for me to answer questions you put in your report without making a much more thorough and complete examination than is required in an ordinary case of a slight acute attack of sickness. Take for instance the question: "Were there indications of disease of the blood vessels?" Now it is no easy matter to determine this, and the question can not be truthfully answered until it is determined. The same is true regarding the question asking whether the patient *has had* any disease of the kidneys, liver, lungs, heart, etc. To even make a diagnosis of exclusion requires a careful and painstaking physical examination of the patient, a chemic and microscopic examination of the urine and the excretions generally. You can readily understand that this takes time and skill. If I am to answer these questions by guessing at it, you are about as competent to do that as I am.

I have consulted an excellent attorney regarding this matter and am prepared to sustain the position taken at all hazards. There is no way by which you can compel me to give you the benefit of my knowledge and experience without adequate compensation. Very respectfully yours,

J. NOER, M.D.

Antitoxin.

CHICAGO, April 13, 1895.

To the Editor:—In an editorial of the April 13 number of the JOURNAL, you refer to the case of Bertha Valentine, of Brooklyn, who died ten minutes after the injection of Behring's antitoxin No. 2, Op. 159, tested Jan. 30, 1895. April 5, I used Behring's antitoxin, No. 2, 1,000 and No. 2, *Op. 159, tested Jan. 30, 1895* (note the coincidence of the Op., please), upon a 4-year-old boy with surprisingly good results. This seems to me but another link in the chain, showing that the cause of death was not inherent in the antitoxin used; for that used by me was *from exactly* the same lot of serum and *cured*, not killed, my case. It might be well to hear from every case upon which Op. 159, Jan. 30, 1895, test has been used.

Trusting that my contribution will help dispel the prejudice aroused by this deplorable case, I am,

Yours respectfully, ROSA ENGELMANN, M.D.

ANSWER:—This letter is itself evidence of the necessity of the collective investigation proposed by the JOURNAL.

Fairfield County (Conn.) Medical Society.

WESTPORT, CONN., April 10, 1895.

To the Editor:—At the one hundred and third annual meeting of the Fairfield County Medical Association, held in Bridgeport, April 9, the following officers were elected: F. B. Baker, East Norwalk, President; J. W. Wright, Bridgeport, Vice-President; L. T. Day, Westport, Clerk; C. R. Hexamer, Stamford, Corresponding Reporter. Censors: F. M. Wilson, Bridgeport; M. V. B. Dunham, Greenfield Hill; W. S. Watson, Danbury. Very truly yours, L. T. DAY, Clerk.

Nu Sigma Nu Convention—Amended Date of Meeting.

DETROIT, MICH., April 12, 1895.

To the Editor:—In my letter to you of March 7, having inclosed a notice of the Nu Sigma Nu Medical Convention for the JOURNAL'S last issue, I gave the dates of meeting in Minneapolis as May 13, 14 and 15. The date has since been changed by Grand Council to June 3, 4 and 5, 1895. So *please make the correction*, and oblige. Very truly yours,

JOHN L. IRWIN, M.D.

ASSOCIATION NEWS.

The Forty-sixth Annual Meeting.

It is the desire of the Committee of Arrangements to issue a complete program of the proceedings for each day, in advance of the meeting. Secretaries of Sections should at once send to the chairman of the Committee on Printing, Dr. W. A. B. Sellman, No. 5 E. Biddle Street, Baltimore, Md., the titles of all papers to be read in their respective Sections, in the order in which they desire them to be read. Titles not received before April 20 can not be entered on the program.

The hours for Section meetings will be from 3 to 6 P.M. Some of the Sections will also hold sessions from 9 to 11 A.M.

All the sessions will be held in Music Hall. The rooms for the different Sections will be designated on the program.

GEORGE H. ROHE, Assistant Secretary.

The Rush Monument Committee.

The annual meeting of the Rush Monument Committee will be held in the Stage Reception Room, Music Hall, Baltimore, on Tuesday, May 7, 1895, at 9:30 A.M. Members of the Committee are requested to be prompt in attendance, to receive the reports of the Chairman and Treasurer.

In this connection, attention is called to the importance of more active exertions on the part of the members of the committee to raise the necessary funds to erect the monument to this distinguished physician and patriot. The Committee has now upward of three thousand dollars in hand toward this object. One of the latest contributions to the fund (1 guinea) was received from the eminent English alienist Dr. Daniel Hack Tuke, whose death has just been announced. In a letter to the secretary of the committee, Dr. Tuke manifested a deep interest in the success of the enterprise, and expressed some surprise that the American medical profession had been so slow in the erection of this well deserved memorial to one of our medical heroes. I may be permitted here to quote the opinion of Dr. Tuke concerning Rush:

"I am glad to be permitted to contribute my mite to the memorial in honor of one I have always greatly admired. It must be confessed that the medical profession of your country has been tardy in publicly recognizing the claims of their most celebrated physician. I paid my humble tribute to his memory in 'The Insane in the United States and Canada,' and can only regret that I have not sufficient command of language to describe adequately his originality, his talent, and above all his devotion to the best interests of our race, including the insane. In the union of medical skill with active benevolence, I think, as I have said in my book, he was the prototype of Fothergill rather than of Sydenham."

To these eloquent words of the distinguished English alienist nothing need be added. We can not however, afford to continue to rest under the imputation that the American medical profession does not appreciate the greatness of the character of Rush, and it is hoped the contributions toward the memorial will be generous at the coming meeting of the ASSOCIATION.

A table will be placed in the lobby of the Music Hall during the meeting, at which subscriptions will be received.

GEORGE H. ROHE,
Secretary Rush Monument Committee.

Section on Physiology and Dietetics.—Chairman, E. H. Woolsey, Oakland; Secretary, C. G. Chaddock, St. Louis. Executive Committee: I. N. Love, St. Louis; W. T. Bishop, Harrisburg; Ephraim Cutter, New York.

1. On Food and Thrombosis, by Ephraim Cutter, New York.

2. Physiologic Treatment of Tuberculosis by Injection of Serum, by Paul Paquin, St. Louis.

3. Vital Resistance to Disease, by G. W. Finley, Harmony, Ind.

4. Researches in Rapid Photography by means of Edison's Kinetograph, and the animated reproduction by the kinetoscope; showing also by this method the present and future possibilities of taking and reproducing certain animated physiologic movements of the larynx, heart, intestines, etc., and certain diseases having visible symptoms, etc.; with an historical of fifty years of photography, by J. Mount Bleyer, M.D., F.R.A.M.S., Naples, etc., New York.

5. The Influences of Atmospheric Electro-Barometric Oscillations, by John North, Toledo.

6. The Physiologic and Pathologic Effects of Electricity, with some results of Practical Experience with Electricity, by E. H. Woolsey, Oakland.

The Baltimore Meeting.

Indications point to a large and enthusiastic meeting of the AMERICAN MEDICAL ASSOCIATION at Baltimore in May, and we do hope that the questions that have been agitating this body for so long will be definitely settled.

What we want is more scientific work, and less squabbling and dickering over ethical matters.

It is common rumor that some of the members from Philadelphia and Pennsylvania intend going in force to demand the elimination of advertisements of proprietary medicines from the pages of the JOURNAL, and dire threats are uttered that if their request is not granted they will do awful things—even retire permanently.

We express the hope that this rumor is not true, but if true, these men ought to realize the fact that the ASSOCIATION will not be swayed by threats, or bulldozing of any kind.

If the JOURNAL is to be kept on its feet, all legitimate revenue should be derived from every source obtainable, and *this* source, which is perfectly *legitimate* and *proper*, should be utilized to its fullest extent.

Don't handicap the Trustees, but give them full rein to do as they deem best. They are not the kind of men to betray any trust the ASSOCIATION may impose upon them.

Under Dr. Hamilton's able editorship the JOURNAL has so improved that it is scarcely recognizable. He has given us a first class JOURNAL and his hands should be upheld.

Let us all put our shoulders to the wheel and make this meeting at Baltimore the banner one.—*New England Medical Monthly.*

Executive or Business Committee.

The first meeting of this Committee will be held in Parlor 23, Hotel Stafford, on Monday May 6, at 5 P.M. Subsequent meetings will be held at the same place and hour, unless otherwise ordered by the Committee. It is hoped that there will be a full attendance, in order to properly consider matters which may be referred to the Committee by the ASSOCIATION, and for the transaction of such other business as may seem desirable. L. DUNCAN BULKLEY, M.D., Secretary.

SOCIETY NEWS.

Association of Military Surgeons of the United States.—The fifth annual meeting will be held at Buffalo, N.Y., May 21, 22 and 23, 1895.

The morning session of the first day will be held in the Star Theater at 10 o'clock. The morning and afternoon sessions will be held at 9 o'clock and 2 o'clock daily, in a convenient and easily accessible location to all hotels, which will be made known in a later announcement. The General Committee headquarters will be in the Iroquois Hotel, where provision will be made for registration.

Addresses: An Address of Welcome to the City of Buffalo, by the Honorable Edgar B. Jewett, Mayor; an Address of Welcome to the State, by the Honorable Levi P. Morton, Governor and Commander-in-Chief of the National Guard of the State of New York; an Address on behalf of the Medical Profession, by Dr. Roswell Park, President of the State Medical Society; an Address by the President of the Association, Brig.-Gen. George M. Sternberg, M.D., LL.D., Surgeon-General, U. S. A.; the Report of the Committee of Arrangements, by the Chairman, Major Albert H. Briggs, M.D., N.G.N.Y.

The Citizens' Committee of Arrangements has provided an elaborate and pleasing program for this meeting, and extends a cordial invitation to all members and prospective members to be present and participate in all the exercises, social and literary. On Tuesday evening, and also at other times during the meeting, the members of the Association as far as practicable will be entertained by hospitable citizens of Buffalo at their private residences and at various clubs. An informal hand shake and conversazione will be held at Hotel Iroquois from 9 to 11 P.M. On the same evening the Committee of Arrangements will also escort to the theaters all visitors so desiring. On Wednesday evening a reception will be tendered the members of the Association and their friends. On Thursday afternoon, if time and weather permit, a carriage drive to various points of interest in the city. On Thursday evening a promenade concert will be given by the band of the 65th Regiment, N.G.N.Y., and a review and regimental parade by the regiment at the Arsenal. It is anticipated that a hop will follow these exercises. On Friday, leaving Buffalo at 9:30 A.M., there will be an invitation excursion to Niagara Falls, and probably on to Fort Niagara. This trip will afford the members an opportunity of viewing the various points of interest at the great cataract, including the prodigious electric power plant, which is exciting the attention of the industrial and scientific world, also the historic battle-grounds of Lundy's Lane and Queenston Heights, General Brock's monument, the Rapids of Niagara, and other interesting places.

PUBLIC HEALTH.

Latest Circular of the New York City Board of Health on Antitoxin.—This Board is now producing 20,000 cubic centimeters of serum each week. People unable to pay for the remedy are supplied without charge. The arrangements for the sale of the excess product are not quite complete. The following is the circular that will accompany the flasks and phials:

"The dose contained in No. 1 is usually sufficient when the cases are mild and the remedy is administered within the first twenty-four or thirty-six hours. Phial No. 2 contains the average full curative dose. In very severe cases, or when the treatment is not begun in a very early stage of the disease, or in any case in which improvement is not marked, the dose must often be repeated twice or thrice, depending upon the symptoms, at frequent intervals of from twelve to twenty-four hours. The remedy is administered by deep hypodermatic injections, a special large syringe being preferably employed for the purpose, although an ordinary hypodermatic syringe, carefully cleaned, may be used, the barrel of the syringe being repeatedly filled. Some point on the anterior surface of the body should be chosen for the injection, where there is an abundance of subcutaneous cellular tissue, as the anterior surface of the abdomen or thorax, or the outer surface of the thigh. Before the remedy is administered the skin should be carefully washed with alcohol or some disinfecting solution. The syringe should be carefully sterilized. The solution is rapidly absorbed, and it is better not to employ massage over the point of injection. When children or adults have been much exposed to diphtheria they may be protected from the disease by the administration of from 150 to 300 antitoxin normal units. The protection probably will not last more than three to eight weeks. The earlier the preparation is administered the more certain and rapid is the cure. In suspicious cases of any severity, and in croup cases, it is better to administer the remedy at once and make a culture at the same time for bacteriologic examination for diagnosis, than to delay the treatment until a diagnosis has been made by bacteriologic examination."

Health Reports.—Sanitary reports to the Supervising Surgeon-General, Marine-Hospital Service.

SMALLPOX—UNITED STATES.

Louisiana: New Orleans, March 30 to April 6, 1 case and 1 death.

Maryland: Charles County (near Newburgh), 24 cases and 3 deaths reported, April 10.

Michigan: Detroit, March 30 to April 6, 3 cases.

Missouri: St. Louis, March 1 to 31, 93 cases and 27 deaths; Nodaway, March 1 to 31, 1 case; Lincoln and Pike Counties, March 1 to 31, 20 cases; no deaths reported.

Ohio: Cincinnati, April 5 to 12, 12 cases of smallpox and 1 case of varioloid.

Pennsylvania: Philadelphia, March 30 to April 6, 8 cases of varioloid.

Texas: Fort Worth, March 30 to April 6, 2 cases.

Wisconsin: De Pere, March 23 to April 8, 1 case (supposed to be contracted through rags in a paper mill); Milwaukee, March 23 to April 6, 13 cases, 4 deaths; April 6 to 13, 5 cases, 1 death.

CHOLERA—FOREIGN.

India: Bombay, March 5 to 12, 1 death; Calcutta, March 2 to 9, 22 deaths; Madras, March 2 to 8, 2 deaths.

Turkey: Constantinople, January 1 to 31, 14 deaths; February 1 to 28, 108 deaths.

SMALLPOX—FOREIGN.

Arabia: Aden, March 2 to 9, 3 cases.

Ecuador: Guayaquil, March 8 to 22, 4 deaths.

England: Leeds, March 23 to 30, 1 case.

Germany: Prague, March 9 to 23, 13 cases.

Gibraltar: March 24 to 31, 2 cases.

Greece: Athens, December 1 to 31, 1 death.

Havana: Cuba, March 28 to April 4, 10 deaths.

Hungary: Buda-Pesth, March 11 to 25, 3 cases.

India: Calcutta, February 23 to March 2, 123 deaths; Singapore, January 1 to 31, 1 death.

Mexico: Nogales, March 23 to 30, 6 cases.

Netherlands: Rotterdam, March 23 to 30, 9 cases, 3 deaths.

Russia: Batoum, March 19 to 26, 6 cases, three deaths; Moscow, March 9 to 23, 6 cases, 1 death; Odessa, March 16 to 23, 1 death; Warsaw, March 9 to 16, 2 deaths.

Turkey: Constantinople, January 1 to 31, 134 deaths; February 1 to 28, 110 deaths.

West Indies: San Juan de Puerto Rico, January 9 to 30, 255 cases, 7 deaths; March 6 to April 3, 237 cases, 7 deaths.

HAVANA, CUBA, April 8, 1895.

Sir:—I have the honor of calling your attention to the mortuary reports recently forwarded to you, in which you will see that as far as the number of deaths from smallpox can indicate the progress of that disease, it has increased very considerably during the last twenty days.

It will be seen that during the week ending April 4 there were ten deaths from it, and during the week ending March 28 there were 12, while during the week previously there were none, and for several weeks before that there had been but one or two deaths a week. Nearly all of these deaths have occurred in the barrio of San Lazaro, a ward in which many poor people and cigar-makers live, and there the disease seems to be raging like a regular epidemic, for, for every death it is fair to calculate there must be from five to ten new cases. No official report of the number of cases of any disease is ever given here.

Your cablegram of the 4th inst. conveying instructions that whenever there should be an unusual increase of yellow fever to cable you, was promptly received and will be implicitly obeyed, but I am happy to inform you that up to date there has been no such increase, there having been but one death from it during the last week, with three new cases approximately. However, in all probability, in view of the large number of unacclimated troops which have arrived, are arriving and will arrive from Spain, there will be much more yellow fever here than usual some time during the coming summer.

Very respectfully, your obedient servant,
D. M. BURGESS, U. S. Sanitary Inspector, M.-H. S.

BOOK NOTICES.

Publications du Progres Medical. Paris. 14 Rue des Carmes. (Bibliotheque d'Education Speciale) Rapport et Memoires sur l'Education des enfants normaux et anormaux. Par E. O. SEGUIN. Préface par BOURNEVILLE. Volume 8 de XLVIII, 340 pages. Price 5 fr.

This book is part of a series of the "Educational Library" of the *Progrès Médical*. The publication of this volume, with a preface by the talented Bourneville, editor of the *Progrès Médical*, must be extremely gratifying to every American, as it is a collection of memoirs of the late Edward O. Seguin, of New York. Although Seguin was himself a Frenchman, Bourneville thinks it necessary to introduce him to the French people, which he does in an appreciative preface and fortifies his judgment of the man by a translation of the obsequies of Seguin at New York in 1880, in which Dr. Brockett, of Brooklyn, Dr. Wilbur, of Syracuse, Dr. George Brown, of Barre, Massachusetts, and Dr. Marion Sims took part.

The first part of the book is devoted to the education of the feeble-minded children, including the rooms in the asylum, the gardens, their plays, methods of instruction, etc. The second part is devoted to the education of deaf mutes and discusses the methods of Pereire, of the Anglo-Spanish school, the Abbe de l'Epee, and the Anglo-American school, as set forth in the writings of Wallace, Braidwood, Bell, Hirsch and others, known as visible speech or lip-reading. The third part is occupied with a discussion of the best means of education of idiots and feeble-minded. The institutions devoted to this benevolent object in all countries are passed in review. The fourth part is given to the discussion of popular education of children in various countries; the fourth chapter of this section is given to the metric system, and the author points out its great simplicity and general adaptability.

The volume concludes with Dr. Seguin's memoirs on idiocy, translated by Dr. Bourneville, and the whole constitutes a notable addition to the literature of the subject.

Text-book of Diseases of the Kidneys and Urinary Organs. By PROF. PAUL FÜRBRINGER; translated from the German, with Annotation by W. H. GILBERT, M.D., with a Commendatory Letter from SIR JAMES GRANGER STEWART. In two volumes. Volume I, octavo, pages 194. London: H. K. Lewis. 1895. Price, $1.75.

Prof. Paul Fürbringer is Director of the Freiderichshall Hospital in Berlin, who has been known to the profession for many years as an able writer in various departments, particularly in connection with the kidneys and the urine. This volume opens with general remarks on albuminuria, hematuria, hemoglobinuria, renal casts, dropsy and uremia, and gives special and particular consideration to the circulatory disturbances of the kidneys, kidney disease in Asiatic cholera, renal affections during pregnancy, engorged kidney, hemorrhagic renal infarctions, inflammation of the kidneys, diffuse nephritis, acute diffuse nephritis, albuminuria in febrile diseases, chronic diffuse nephritis, contracted kidney, amyloid degeneration of the kidney, and infection of the kidneys leading to suppuration.

There is absolutely no padding in this book. It has been pruned, pared and freed from superfluities until from start to finish it is a solid compact mass of well-digested facts. To contemporaries, while not always agreeing with them in their conclusions, Fürbringer has been generous, and apparently has never omitted to mention the name of an individual connected with a theory or demonstration of any portion of the subject under consideration. In this respect the book is to be commended beyond any that has recently fallen under our observation. The deep knowledge displayed by the author, and his candor, should commend the work to all English-speaking people.

The translator and publisher have done their part well to give the book a handsome setting in its English dress. We shall look for the second volume of this work with increased interest. We observe with pleasure that the English translator has used the metric system of doses and measurements throughout the book.

A Book of Detachable Diet Lists for Albuminuria, Anemia and Debility, Constipation, Diabetes, Diarrhea, Dyspepsia, Fevers, Gout or Uric Acid Diathesis, Obesity, Tuberculosis, and a Sick-Room Dietary. Compiled by JEROME B. THOMAS, A. B., M.D. Philadelphia: W. B. Saunders; Chicago: A. C. McClurg & Co. 1895. Price, $5.

This book will save the practitioner a great deal of work and be distinctly to his advantage, as there is every reason to believe that the general dietary is seldom carried out with the same care in private practice that is characteristic of it in hospitals, especially in military and naval service, where, as a rule, the diet is prescribed for the patient even before the prescription is written, and it is made possible with these lists to carry out the diet system in private practice with great ease. In addition to the list of articles given there is a collection of sick-room dietaries at the end of the book, which gives almost all of the forms of sick-room foods. These lists have been printed and bound in a book and perforated, so that they may be torn out when we have a patient to nurse as occasion may require. Ten lists are given, namely, those for patients with albuminuria, anemia and debility, diabetes, diarrhea, dyspepsia, fevers, gout or uric acid diathesis, obesity, tuberculosis, and a sick-room dietary.

Medical Gynecology. A Treatise on Diseases of Women from the Standpoint of the Physician. By ALEXANDER J. SKENE, M.D., Professor of Gynecology in Long Island College Hospital, Brooklyn, N. Y. With illustrations. 8vo, 529 pages. New York: D. Appleton & Co. 1895.

The volume is divided into three parts, of which Part I treats of development and growth, differentiation of sex, discusses heredity, environment and care in childhood, and mental and physical education. Part II treats of the characteristics of sex and the relations between structure and function, the predisposition to peculiar diseases, and the etiology of diseases of women. The diseases of the child-bearing period are also carefully treated. In Part III the menopause and diseases after the climacteric are taken up. The observations of a well-trained observer like Dr. Skene can not fail to be interesting and instructive to the general practitioner, as well as specialist, and we predict that in the present movement against excessive operative treatment in gynecology, its advocates will turn naturally to the work of Dr. Skene as a safe one in which the lines between medical and surgical gynecology, although arbitrary, are clearly drawn.

A Manual of the Modern Theory and Technique of Surgical Asepsis. By CARL BECK, M.D. With 65 illustrations, and 12 full-page plates; 306 pages. Philadelphia: W. B. Saunders. 1895. Price, $1.25.

This book is rather interesting, as it sets forth clearly and distinctly the modern practice of asepsis as distinguished from antisepsis. There are sixteen chapters, namely, I, of microbes; II, of asepsis; III, means of disinfection; IV, prophylactic disinfection; V, disinfection of instruments and dressings; VI, sterilization of catgut, silk, etc.; VII, sponges, drainage tubes and ligation tubes; VIII, an aseptic operating room; IX, aseptic wounds; X, infected wounds; XI, aseptic bone wound treatment; XII, renewal of dressing; XIII, technique of aseptic operation; XIV, aseptic injection; XV, anesthesia; XVI, asepsis of private practice. There have been several good books on this subject lately, notices of which have appeared in these columns, but the book under consideration is original in many respects. We commend it.

Cod-liver Oil and Chemistry. By F. PECKEL MÖLLER, Ph.D. London, 43 Snow Hill, E. C.; Christiana, Norway: Peter Möller. New York: W. H. Schieffelin & Co. Copenhagen: A. T. Moller & Co.; 508 pages. 1895.

This well-known firm of manufacturers have produced a book of great merit, not alone on account of the novel and interesting information in connection with the fishes and oil, but on account of the advanced chemistry it contains. One of the peculiar features of the chemic part of this work is the abandonment of the usual method of representing atomic parts in chemic formulæ and the introduction of a diagrammatic illustration. The book is an exceedingly interesting one, and notwithstanding its commercial origin is a distinct addition to medical literature.

Transactions of the World's Columbian Dental Congress, in two volumes. Edited for the General Executive Committee by A. W. HARLAN, A.M., M.D., D.D.S., assisted by LOUIS OTTOFY, D.D.S. Volumes I and II, paper, pages 1068. Chicago. 1894.

This handsome set of Transactions records the gathering of the greatest number of prominent practitioners of the dental art, and it is certainly a tribute to the fecundity and the great scope of medical science when one of its youngest departments can prepare and promulgate a scientific work of this character. Few realize the immense strides which the art of dentistry has made in the last few years, and although dentists in America were fond of pointing to this and the other one of their number as an example of the high scientific standard which American dentistry had attained, it was reserved for the French Commission, who visited America in 1887, to give to the dentists of the United States the proud position of the first rank in the dental art.[1] It was appropriate, then, that this first International Congress should be held in the United States, not only on account of the conceded preëminence of our dental practitioners, but on account of the recognition that has been extended to them as medical practitioners by the AMERICAN MEDICAL ASSOCIATION. Many languages were spoken at

[1] Kuhn: l'Art Dentaire des Etats Unis, Paris, 1888.

this Congress, which have been reduced in the Transactions to four, namely, French, German, Spanish and English. The suggestion was made in the closing of this Congress that, owing to the great success of the present one, future dental congresses should be held on each occasion of the holding of an International Exposition. This may be said to be the second Congress of this character, the first having been held in Paris in 1889.

The papers read in the various sections, along with the discussions, are printed in these volumes, and the work reflects great credit on the editors and the publication committee.

King's College Hospital Reports; being the Annual Report of King's College Hospital in the Medical Department of King's College. Edited by NESTOR TIRARD, M.D., F.R.C.P., W. WATSON CHEYNE, F.R.C.S., JOHN PHILIPS, M.A., M.D., F.R.C.P., W. D. HALLIBURTON, M.D., F.R.S. Vol. I. May 1, 1893, to Sept. 30, 1894. Price $1.25; to non-subscribers, 7s. 6p. London: Adlard & Son. 1895.

It will be seen that this is the first volume of the reports of King's College Hospital and its Medical School. The volume opens with an historical sketch of the college and hospital by John Curnow, M.D., after which are articles as follows: Curable Stage of some Incurable Maladies, by Lionel S. Beale; Abstraction of Blood Clinically Considered, by Oliver B. Duffin; A Case of Functional Albuminuria, by Nestor Tirard; Psychology of Medicine in Relation to the Medical Practitioner, by Ernest W. White; Sneezing, by G. McDonald; On the Principle of Selection as Applied to the Administration of Anesthetics, by J. Frederick W. Silk; On Artificial Maturation of Immature Senile Cataract by Trituration, by Malcolm M. McHardy; On Some Cases of Pelvic Suppuration in the Female, by John Philips; Treatment of Gonorrhea and Gleet by Means of the Urethroscope, by F. Burghhard; Bursitis, by George Lenthal Cheatle; The Value of the Discoveries of Sir Charles Bell, by William A Turner; after which follow a classified summary of medical cases admitted during the year, notes of medical cases, tables of surgical cases, reports of fatal cases, reports of cases of interest, reports of various departments, the museum, the medical society of the College, report from volunteers, athletic records, and old students' dinner.

The illustrations in this book are all good, and some of them excellent. It is evident from a perusal of the papers that the work at King's College does not lag behind that of the other large hospitals of London.

Report of the Massachusetts State Board of Health upon the Metropolitan Water Supply, February, 1895. Boston: Wright & Potter Printing Co. 1895.

The State Board of Health of Massachusetts, under legislative act of 1893, was authorized and directed to investigate, consider and report upon the question of water supply for the city of Boston and its suburbs within a radius of ten miles from the State House, and for such other cities and towns as in its opinion should be included in connection therewith. This exhaustive report has been made in accordance with the law, and it affords an example which should be taken as a model for similar investigations in other portions of the United States. We have elsewhere referred to this report. (See page 293.)

Manual of General Medicinal Technology, Including Prescription Writing. By EDWARD CURTIS, A.M., M.D., Emeritus Professor of Materia Medica and Therapeutics, College of Physicians and Surgeons, Medical Department of Columbia College, in the City of New York. Third Edition, conforming to the U. S. Pharmacopœia of 1890. Pocket size (Wood's Pocket Manual Series), 245 pages. Price, $1.

This little manual, small enough to carry in the pocket, has reached its third edition, which we are informed was made necessary by the changes in the Pharmacopœia of 1890 It is an excellent book and will be found useful for reference. In our opinion, however, the author devotes too much space to the old apothecaries' system, which, since the adoption of the metric system in the new Pharmacopœia, has become practically obsolete.

Ninth Annual Report of the State Board of Health and Vital Statistics of the Commonwealth of Pennsylvania. By CLARENCE M. BUSCH; 833 pages. 1894.

This book includes the report of the Secretary, Dr. Benjamin Lee; report and analysis of water samples; reports of epidemics; quarantine; disinfectants, and of the water supplies in various parts of the State. There are few boards that work more harmoniously with municipal boards than the State Board of Health of Pennsylvania, and in consequence of this harmony they have been able to accomplish a great deal. The volume under consideration deserves to rank among the best of its predecessors.

Report of the Commissioner of Education for the Year 1891-92. Vols. I and II, containing Parts I, II, III. 1294 pages. Washington: Government Printing Office. 1894.

The report of the Commissioner of Education is of more than usual interest, and shows in a marked degree the great advances that have taken place in the evolution of the Bureau, which from its humble beginning in 1870, has now the reports on the school systems and university methods of all countries of Europe, comprised in these volumes. All those interested in education, either in a special department or generally, will do well to write for the report.

The Evolution of the Diseases of Women. By W. BALLS-HEADLEY, M.A., M.D. (Cantab) F.R.C.P. (London); 375 pages. London: Smith, Elder & Co.; Melbourne and Sydney: George Robertson & Co. 1894.

This book is intended by the author to be a "Contribution to the Study of the Natural History of Disease." The author's treatment seems sound, even if his pathology is a little hazy at times. The work is well illustrated and handsomely printed.

Index of Medicine. A Manual for the Use of Senior Students and Others. By SEYMOUR TAYLOR, M.D.; 794 pages. Philadelphia: Lea Brothers & Co. 1894.

This book contains in compact form the essentials of medicine, a short chapter on general pathology and general medicine, specific infectious diseases and specific fever, then the diseases of the different regions are taken up. It is an extremely convenient book for ready reference.

The International Medical Annual and Practitioners' Index. A Work of Reference for Medical Practitioners. Thirteenth Year Annual, 648 pages; New York: E. B. Treat, 5 Cooper Union. Chicago: 199 Clark Street. 1895.

This well-known annual contains the usual amount of new matter, as well as improvements and changes of the year. Its scope includes the entire range of medicine and surgery and the compilers are experienced literary workers.

The Treatment of Wounds, Ulcers and Abscesses. By W. WATSON CHEYNE, M.B.Ed., F.R.S., F.R.C.S.; 197 pages. Philadelphia: Lea Bros. & Co. 1895.

The author has been long known as one of the advanced men who practice asepsis in surgical work. This little work will be useful in furnishing the medical world with the careful style and technique of a master in surgery. Every surgeon should add this to his library.

Transactions of the American Pædiatric Society. Sixth Session, held at Washington, D. C., May 29, 30, 31, and June 1, 1894. Edited by DILLON BROWN, M.D., New York. Vol. VI, paper. Reprinted from the *Archives of Pædiatrics*. 1894.

These transactions comprise the reports read at the last meeting, held in Washington, 1894. There are eulogies of Drs. Keating and Earle by Dr. Forchheimer, of Cincinnati, and many interesting papers.

The Year-Book of Treatment—1895. Philadelphia: Lea Bros. & Co. 1895.

In this year-book we have one of the most compact of the several manuals that have been presented for consideration, inasmuch as it is very much condensed and very carefully edited. Those desirous of securing in condensed form a summary of the newer systems of treatment brought out during the year will do well to secure this volume.

NECROLOGY.

BERNHARD GRUNHUT, M.D., who was formerly of New York City, is alleged to have lost his life on or about August 22, of last year, when coming to this country on the steamer *Bothnia*. His estate, valued at $150,000, has been the subject of a vast amount of litigation. Two days before he sailed he made a will leaving $25,000 to his wife and the greater part of his estate, amounting to about $100,000, to the Mount Sinai Hospital, and the Hebrew Benevolent Society of New York. There was also $25,000 left to an unborn child, which amount was to revert to the residuary estate, should the child die before it was 21 years old. A child was born after the doctor's disappearance from the *Bothnia*, which lived a few hours. The contestants, a brother and a sister of the testator, endeavored to show that the Doctor was insane at the time of his marriage, and therefore, mentally incapable of entering into such a contract. Counsel for the contestants claimed that if the surrogate held that he had no jurisdiction, all that he could do was to permit them to withdraw. On this point the surrogate announced that he would reserve his decision. The will was then admitted to probate and the pending issue closed in the surrogate's court. The remainder of the estate is divided among a number of small legatees. Had the case been continued some interesting expert testimony on insanity would have been given. The defense had subpœnaed Dr. G. Alder Bloomer, Superintendent of the State Asylum for the Insane at Utica, and Drs. Jacobi, Dana and Spitzka, of New York, were among the medical witnesses who were expecting to be called to testify.

JOHN W. COLES, M.D., retired surgeon of the United States Navy, died at his home in Philadelphia, April 6, in the fifty-seventh year of his age. Dr. Coles was born in New Jersey, on August 14, 1838. Soon after beginning the practice of medicine in May, 1863, he was appointed Acting Assistant Surgeon in the United States Navy from this State, and served in that capacity on the United States Ss. *North Carolina*. On June 25, 1863, he was made Assistant Surgeon, and was subsequently on duty on the United States Ss. *Paul Jones*, of the South Atlantic Blockading Squadron; at the Naval Battery, Morris Island, S. C.; United States ironclad, *Catskill*, of the South Atlantic Blockading Squadron; United States Ss. *Pontiac;* at the Naval Hospital, New York; and on the *Bienville*, West Indies. On January 14, 1867, he was promoted to Passed Assistant Surgeon, serving at the Naval Academy, on the *Lancaster* at Norfolk, Va.; on the *Ashuelot* in the Asiatic fleet. He also did special service on the United States Ss. *Minnesota* from May 7, 1869, and on July 3, 1868, was transferred to the Naval Hospital in this city. He was promoted to Surgeon in October, 1873, returning to duty at the Philadelphia Naval Hospital. He was assigned to the Naval Hospital at Yokohama, Japan, in April, 1875, and on returning to this country in 1878 was detailed on the Medical Examining Board and the National Board of Health at Washington. His last service was in this city at the Naval Hospital and as a member of the Medical Examining Board. He was placed on the retired list Feb. 6, 1885.

GEORGE W. BATES, M.D., died at the residence of his father in Louisville on April 4, of pneumonia. Dr. Bates was born in Fairmount, Ky., about twelve miles from Louisville, Feb. 22, 1847. He received his education at Cecelian College, where he graduated in 1869. After this he taught school for several years in Carlisle, Ind., beginning the study of medicine at the Hospital College of Medicine in 1876, where he graduated Feb. 26, 1878. As a result of a competitive examination he received the appointment of interne at the Louisville City Hospital and served one year. He was associated for one year upon the beginning of his practice, with Dr. Willis. He has practiced continually since that date in Louisville. He had a chill at the funeral of his father whom he had attended during his illness from pneumonia, and died himself of pneumonia one week later. He was a widower but left no children.

SWAYNE WICKERSHAM, M.D., Chicago, April 16. Dr. Wickersham was one of the oldest practitioners in Chicago. He was Commissioner of Health under Mayor Cregier. For some time his health had been gradually failing. Dr. Wickersham was a Quaker. He was born in the early 30's in Pennsylvania and came to Chicago forty years ago. He was a member of the Cook County, State and AMERICAN MEDICAL ASSOCIATIONS. He was unmarried and leaves a considerable estate. The remains will be taken to the home of his sister at Kennett, Pa., in accordance with his last wish.

B. G. MERRY, M.D., of Stillwater, Minn., March 27, aged 62.——J. H. Fuller, M.D., of Chattanooga, Tenn., April 2.——James Kennedy, M.D., of San Antonio, Texas, March 30.——J. B. Morgan, M.D., of Joplin, Mo., March 30, aged 72.——Peter J. Dwyer, M.D., of St. Paul, Minn., March 30, aged 55.——Horace Babcock, M.D., of Las Vegas, N. M., March 25.——Thomas Wheat, M.D., of Manchester, N. H., March 25, aged 74.——G. W. Cusick, M.D., of Tualatin, Ore., April 3, aged 54.——Albert G. Anthony, M.D., of Oakland, Cal., April 3, aged 50.——Carl Hoffman, M.D., of Baltimore, Md., April 8.——H. C. Baker, M.D., of Kansas City, Mo., April 8, aged 50.——George Gaston Brewer, M.D., of Baltimore, April 8, aged 59.——B. H. Harris, M.D., of Groveland, Ill., April 6.——L. C. French, M.D., of Hudson, Mich., April 12.——J. T. Ball, M.D., of Rushville, Ill., April 4, aged 69.——L. D. G. Gifford, M.D., of Watertown, N. Y., April 8, aged 38.——A. H. Cochran, M.D., of San José, Cal., April 4, aged 64.——C. D. O'Brien, M.D., of Ackley, Iowa, April 4.——L. M. Tidrick, of Winterset, Fla., April 3.——J. W. Gill, M.D., formerly of Louisville, but lately of Danville, Ky., died at the latter place after a brief illness, April 2, of pneumonia.

MISCELLANY.

Change of Address.—Dr. V. L. Hurlbut to Wellington Hotel, Chicago. Dr. S. S. Adams, to 1 Dupont Circle, Washington.

Billroth's Monument.—This memorial will soon be placed in the court of honor of the University of Vienna. A monument to Skoda and Rokitansky has been also ordered by the Council of the Faculty.

Reunion.—It is proposed to have a reunion of the class of 1874 of the Jefferson Medical College, on the evening of May 10, in Philadelphia. Members of the class who have not received an announcement will please forward their names to E. E. Montgomery, 1715 Walnut St., Philadelphia.

Another "Faith-Cure" Fatality.—The coroner at Dayton, Ohio, has held Col. F. B. Mead and his wife to be responsible for the death of their 12-year-old daughter, who was by them permitted to be treated by "faith-cure" methods, while she was suffering from tubercular meningitis.

Health Officer of Chicago.—Concerning various rumors afloat, we sincerely hope that the intense desire of Mayor Swift for civil service reform will not induce him to appoint a hod carrier or hotel drummer as Health Commissioner. There is a prejudice in favor of having a physician and sanitarian in that office. Why not retain Doctor Reynolds?

The Hot-Air Cradle.—This is the name given, at one of the New York city charities, the Bowery Mission, to a hot-air chamber, the use of which is to kill the vermin that infest the clothing of a portion of their lodgers. When the tramp disrobes for the night, his garments can, if he so desires, be placed in a wire pocket or cradle, and suspended in a hot atmosphere that does such cleansing as may be accomplished by dry heat.

Dr. T. M. Drown Chosen President of Lehigh University.—The election of Thomas M. Drown, M.D., etc., to the Lehigh Presidency took place on the 4th inst. Dr. Drown is a graduate from the medical department of the University of Pennsylvania, class of 1862, at which his ruling passion strong in graduation showed itself in the subject of his thesis, namely, Urological Chemistry. Dr. Drown has formerly filled the professorship of chemistry at Lafayette College, later at the Boston Institute of Technology. He was until recently the chemist of the Massachusetts State Board of Health.

Presentation to Professor Sir William Turner.—The colleagues and former pupils of Sir William Turner, Professor of

Anatomy at the University of Edinburgh, united in presenting a portrait of himself, as a testimonial of their esteem, respect and appreciation of his unfaltering zeal in the cause of science, and his faithful services to the University of Edinburgh. The picture, painted by Sir George Reid, P.R.S.A., is of three-quarter size, and portrays Sir William Turner in a characteristic pose while lecturing. Sir James Russell conducted the presentation ceremony which took place in the lecture room April 3, and was the occasion of the gathering of representative academic and medical men of the city.

Longevity of Physicians.—Dr. Salzmann, of Essling, Germany, has made a study of all the available facts regarding the above subject, to be found in the records of his country, going as far back as to the sixteenth century. In that century the life period of the medical man was 36.5 years; in the seventeenth 45.8; in the eighteenth 49.8, and in the current century 56.7. The gradual growth of preventive medicine, and especially those measures that have reduced typhus fever and smallpox, has tended to bring about the increased life rate.

An English Colony for Epileptics.—The *Echo* of London gives an abstract of the work done, during the first eight months, by the National Society for the Employment of Epileptics, which is essentially the record of success: "At Skippings Farm, Chalfont St. Peters, two or three epileptics were first of all placed, then two or three more, until, by the addition of units, never groups of persons, the number has grown to twenty; thus the family feeling has been preserved. The patients vary in age from 18 to 50, and 'most thoroughly repay the unremitting care and attention bestowed on them.' The work undertaken at present is, to a large extent, potato growing for market, vegetable gardening, carpentering, building, bootmaking and tailoring."

Measurements of a Selected Venus.—Out of five hundred applicants—more or less—for the position of a bronze Venus, in a New York show, one little woman filled the bill, whose measurements are said by her to be the following. She thus announces her statistics: "One artist says my figure is one of the best that he has ever seen, and I think myself the measurements show up very well. I am 5 feet 7 inches in height and weigh 155 pounds. My other measurements are: bust, 38 inches; waist, 26 inches; thigh, 22 inches; calf of leg, 15 inches; ankle, 9 inches; foot, 9 inches in length. My upper arm is 11½ inches, and my neck 13¼ inches. Many women have figures superior to mine in certain points; but it is a most difficult thing to find a perfect, all-round figure."

Another Survey of the Croton Watershed.—Filtration Necessary.—Representatives of the New York city departments have again visited the Kensico district of the Croton system. Their informal reports show that much work is needed to furnish a desirable water from that region. The New York *Herald* insists that infiltration beds will need to be constructed before the good name of Croton will be re-established. The editor of that paper writes as follows: "The inspection was limited in its scope to the Kensico region. Kensico is reported 'the least safe of any of the supplies of the water service.' But further inspection may reveal other sources of dangerous contamination. It should not for a moment be forgotten by any New Yorker that the city's water supply never can be pure until some system of filtration is adopted. The most thorough purgation of the Croton basin that can possibly be made would at best be a poor make-shift for protecting citizens against polluted drinking water. No adequate protection is possible without filtration of all the water admitted to the main pipes. The sooner the public understands this and provides for real purification of the water supply the better it will be for the public health."

Increased Losses of Life and Property by Lightning.—In Germany, a paternal government controls in large measure the deforestation of the unsettled regions. The complaint has been made that this control was neither efficient nor wisely ordered, and that as a result the country was suffering unduly from lightning. The following report appears to confirm that view: "The director of the statistical bureau at Berlin has written a treatise on the increase of damage caused by lightning and its effects on the human body. Among the causes he assigns for increased destructiveness are the extended use of electricity, the changed character of the earth's surface through drainage, denudation of timber, etc., and the constantly increasing use of coal, by which impurities are introduced into the air. In Bavaria the annual average of fires caused by lightning was 52 for the period of 1844–1865, while for 1866–1879 it was 103, and for 1880–1882, 132.

The Length of the Lower Limbs; Abraham Lincoln's Definition.—There is an elaborate symposium in the *Independent*, having for its topic the life and death of President Lincoln. Among the anecdotes related of him is the following, which will be new to the majority of our readers: On one occasion it is said that some of Mr. Lincoln's friends were talking about him and Stephen A. Douglas. The conversation led to the physical proportions of the respective men and an argument arose as to the proper length of a man's leg. During the discussion Mr. Lincoln came in and quietly seated himself, and it was agreed that the question should be referred to him for settlement. They told him what they had been talking about and asked him what, in his opinion, was the proper length of a man's legs. "Well," said he, reflectively, "I should think that they ought to be long enough to reach from his body to the ground."

Crew Space.—The Bureau of Navigation calls attention to a recent act which went into effect April 1, 1895: "Every place appropriated to the crew of a vessel must contain not less than 72 cubic feet and not less than 12 superficial feet, measured on floor or deck of that place for each seaman or apprentice lodged therein. Such place shall be adequately ventilated, properly lighted, drained and protected from weather and sea, and as far as practicable properly shut off and protected from effluvium of cargo and bilge water; and failure . . . shall subject owner to penalty of $500."

Such place must be kept free from goods or stores under penalty for non-compliance.

"Sec. 3. . . . provisions of this act requiring a crew space of 72 cubic feet per man shall apply only to vessels the construction of which shall be begun after June 30, 1895."

College Commencements.

THE ATLANTA, GA., MEDICAL COLLEGE.—April 2, one hundred and thirty-five graduates.——Bellevue Medical College, N. Y., March 25, eighty-nine graduates.——Tennessee Medical College of Knoxville, March 26, fifteen graduates ——St. Louis College of Physicians and Surgeons March 26. forty-nine graduates.——The Omaha, Neb., Medical College, April 3, twenty-four graduates.——The Southern Medical College at Atlanta, Ga., April 3, sixteen graduates. Total, 328 graduates.

Hospital Notes.

THE regular monthly meeting of the board of mangers of the New York State Hospital was held in Utica, April 10. The report of the Superintendent showed that there were 1,028 patients in the hospital. The twenty-fourth annual report of the Mercy Hospital at Davenport, Iowa, shows 164 inmates. Nearly $200,000 have been expended on the grounds.——Plans are being prepared for the purpose of building a floating hospital at Providence, R. I. It is intended for use in contagious diseases.——The St. Vincent's Hospital Society of Toledo, Ohio, was organized April 7. This society is formed for charitable purposes, and will aid the St. Vincent's Hospital and Orphan Asylum.——The new cottage hospital for the insane at Independence, Iowa, was formally opened April 16.

Society Notes.

THE annual meeting of the District Medical Society of Northwest Missouri was held at St. Joseph, Mo., April 11.

The following officers were elected for the ensuing year: President, D. D. Bryant, of Savannah; Vice-President, W. W. Carter, of Wathena; Secretary and Treasurer, B. M Berry, of Chicopee Falls; Secretary and Treasurer, J. M. Townsend, of St. Joseph. The next meeting of this society will be held in July.——A quarterly meeting of the Iowa and Illinois District Medical Association was held in Davenport, Iowa, April 11.——The Eastern Hampden Medical Association held its fifteenth annual meeting in Springfield, Mass., April 4. The following officers were elected: President, George T. Ballard, of Hampden; Vice-President, L. M. Berry, of Chicopee Falls; Secretary and Treasurer, J. M. Hannum of Ludlow.——The Snyder County Medical Society held a regular meeting at Selina Grove, Pa., April 4. The following officers were elected: President, A. M. Smith; Vice-President, J. F. Kanawell; Secretary and Treasurer, J. O. Wagner.——The annual meeting of the Cuyahoga County Medical Society was held in Cleveland, Ohio, April 4. The following officers were elected: President, H. E. Haldeman; Vice-President, H. C. Eyeman; Second Vice-President, W. C. Weber; Secretary, B. F. Oswald.——A regular meeting of the Cleveland Medical Society was held April 12.——The Lehigh County Medical Society met in Allentown, Pa., April 10. Resolutions were passed relative to the prevention of blindness.——The annual meeting of the Oneida County Medical Society was held in Rome, N. Y., April 9. The following officers were elected for the ensuing year: President, Charles E. Smith, Whitesboro; Vice-President, Charles G. Ward, Utica; Secretary, David Eynon, Utica; Treasurer, H. G. Jones, Utica.——The Twin City Medical Society held a meeting in Kansas City, Mo., April 9. The following officers were elected: President, E. H. Thrailkill; First Vice-President, A. R. Greenlee; Second Vice-President, L. A. Schaefer; Secretary J. N. Jackson.——A regular monthly meeting of the Los Angeles Medical Society was held April 5.

Philadelphia Notes.

Obstetrical Society.—The April meeting of the Obstetrical Society had a discussion on the subject of uterine fibroids especially the treatment of this condition when complicating pregnancy. Dr. Anna M. Fullerton of the Woman's Hospital read a paper and presented specimens and photographs, which form a valuable contribution to the subject. Dr. Geo. E. Shoemaker reported a case of hysterectomy by ligation for fibroma. He also presented a very interesting specimen showing anastomosis of the small intestine by the Murphy button, the operation having been performed eleven months before death by Dr. J. B. Murphy when on a visit to this city in September, 1893. It was done originally to close a fecal fistula following strangulated hernia, but the operation was not successful. Another attempt nine months later was made by Dr. Holmes, to close the fistula by resection and button anastomosis but death resulted from exhaustion.

Louisville Notes.

Long.—Dr. John L. Long has been appointed expert to the State Board of Health, to be sent any place in the State where smallpox is suspected to exist, and there is no doubt as to the diagnosis. The choice is an excellent one and the appointment one of importance, as there has been considerable conflict between local physicians in different parts of the State and the health authorities, when a diagnosis was in doubt. Dr. Long was for several years Superintendent of the Louisville City Hospital, but has again entered the practice of medicine, limiting his practice to genito-urinary and skin diseases.

Death Report.—During the past week there was a total of eighty-seven deaths; of these twenty-six were due to pneumonia, fourteen to consumption, four to organic heart disease. There were eight still-births. Forty-two were single, thirty-eight married, sixty-eight white, nineteen colored, three died at the City Hospital. The percentage of deaths from pneumonia still continues enormous.

Washington Notes.

Medical Society of the District.—At the regular meeting of the society held on the 3d inst., the essay of the evening was read by Dr. Anita Newcomb McGee, subject, "Esoteric Medical History of the Oneida Community." Twenty-five new members were elected to membership.

At the meeting of the society held on the 10th inst., Dr Andrew H. Smith, of New York, the guest of the society, read an essay entitled "Some Points in the Physical Examination of the Chest." The discussion was opened by Dr. W. W. Johnston, and continued by Drs. Prentiss, Stowell, Adams and others. Dr. H. L. E. Johnson reported nine successful cases of laparotomy and presented specimens. Dr. G. L. Magruder reported a case of cancer of the stomach.

The Washington Obstetrical and Gynecological Society.—The two hundred and twenty-sixth meeting of the society was held April 5. Dr. T. C. Smith read the paper of the evening, entitled, "A Case of Hypertrophy of the Cervix Uteri, complicating Pregnancy and Labor." The hypertrophied cervix was amputated post-partum and the woman restored to health. The cervix was six inches long and protruded from the vagina. An instructing discussion followed. Dr. H. L. E. Johnson presented an interesting specimen of ovarian cyst removed by himself on the 22d ult. The fimbriated extremity was closed, largely distended with fluid, intimately adherent to the cyst wall and the two cavities separated by a very thin septum. It was a tubo-ovarian cyst in transition stage.

Dr. S. C. Busey.—The profession will be pleased to learn that Dr. Busey, who is confined to bed with a fracture of the right hip, is resting comfortably and is expected to make a speedy recovery.

Dr. J. Ford Thompson, who has been dangerously ill from a septic injury is considered out of danger.

Health of the District.—The report of the Health Officer for the week ended April 9 is as follows: Number of deaths (still-births not included), white 55, colored 49, total 104.

Fire Escapes for Hospitals.—The Commissioners are requiring all hospitals in the District to comply with the law of March 2 by providing suitable fire escapes, stand pipes, red lights, etc.

THE PUBLIC SERVICES.

NOMENCLATURE AND CLASSIFICATION OF DISEASES.

Statistical nomenclature and classification of diseases and injuries; Medical Department of the Navy of the United States—in operation Jan. 1, 1890.

Class I.—Parasites and Parasitic Diseases.

Actinomycosis.	Oxyuris vermicularis.	Tænia.
Ascaris lumbricoides.	Pediculus.	Tinea favosa.
Echinococcus.	Pityriasis.	Tinea trichophytina.
Filaria medinensis.	Pulex penetrans.	Trichinosis.
Filaria sanguinis.	Scabies.	Other dis's of this class.

Class II.—General Infectious Diseases.

(Non-venereal.)

Cachexia malarialis.	Gangrena nosocomialis.	Septicemia.
Catarrhus epidemicus.	Morbilli	Tetanus.
Cholera.	Neuritis endemica.	Tuberculosis miliaris acuta.
Cholera morbus.	Paralysis ascendens acuta.	Tuberculosis pneumonica acuta.
Dengueis.	Parotitis epidemica.	Tuberculosis pneumonica chronica.
Diphtheria.	Pertussis.	Tuberculosis of other parts.
Dysenteria acuta.	Pyemia.	Typhus.
Dysenteria chronica.	Rabies.	Vaccina.
Erysipelas.	Rheumatismus articularis acutus.	Varicella.
Febris cerebro-spinalis.	Rheumatismus articularis chronicus.	Variola.
Febris enterica.	Rubella.	Other diseases of this class.
Febris flava.	Scarlatina.	
Febris intermittens.		
Febris pneumonica.		
Febris recurrens.		
Febris remittens.		

Class III.—Constitutional Disorders or Nutrition.

Anemia.	Hemophilia.	Purpura hemorrhagica.
Debilitas senilis.	Leucocythemia.	Purpura simplex
Diabetes insipidus.	Lithemia.	Scorbutus.
Diabetes mellitus.	Pseudoleucocythemia	Other dis's of this class.

Class IV.—Diseases of the Nervous System.

Apoplexia.	Irratio spinalis.	Paraplegia.
Aphasia.	Mania.	Prostatio thermica.
Atrophia muscularis progressiva.	Melancholia.	Sciatica.
Cephalalgia.	Meningitis.	Sclerosis lateralis amyotrophica.
Chorea.	Monoplegia.	Sclerosis lateralis spastica.
Dementia.	Myelitis.	Sclerosis multiplex.
Encephalitis.	Nausea marina.	Sclerosis spinalis posterior.
Epilepsia.	Neuralgia.	Syncope.
Febris continua simplex.	Neurasthenia.	Torticollis spasmodica.
Febris ephemera.	Neuritis.	Vertigo.
Febris thermica.	Neuritis multiplex.	Other diseases of this class.
Hemicrania.	Neurosis hysteroidea.	
Hemiplegia.	Paralysis agitans.	
Insomnia.	Paralysis glosso-labio-laryngealis.	
	Paranoia.	

Class V.—Diseases of the Visual Apparatus.

Achromatopsia.	Corneæ ulcus	Myopia.
Amaurosis.	Dacryocystitis.	Neuritis optica.
Amblyopia.	Ectroplum.	Obstructio lacrymalis.
Asthenopia.	Entroplum.	Panophthalmitis.

Astigmatismus.	Glaucoma.	Pterygium.
Blepharitis.	Hordeolus.	Retinitis.
Cataracta.	Hypermetropia.	Sclerotitis.
Chalazion.	Iritis.	Synechia.
Choroiditis.	Keratitis.	Trachoma.
Conjunctivitis.	Leucoma.	Other dis's of this class.

CLASS VI.—DISEASES OF THE AUDITORY APPARATUS.

Myringitis.	Otitis externa.	Surditas.
Otalgia.	Otitis media.	Other dis's of this class.

CLASS VII.—DISEASES OF THE OLFACTORY APPARATUS.

Antri abscessus.	Rhinitis acuta.	Other diseases of this
Catarrhus estivus.	Rhinitis chronica.	class.

CLASS VIII.—DISEASES OF THE NUTRITIVE APPARATUS.

SUBSIDIARY CLASS 1.—DISEASES OF THE DIGESTIVE APPARATUS.

Adenitis salivosa.	Diarrhea simplex.	Obstructio intestinalis.
Anl-prolapsio.	Dyspepsia nervosa.	Odontalgia.
Ani-rhagades.	Fistula in ano.	Odontolithus.
Appendicitis.	Gastralgia.	Esophagostenosis.
Catarrhus gastricus acutus.	Glossitis.	Parulis.
	Hematemesis.	Peridontitis.
Catarrhus gastricus chronicus.	Hemorrhois.	Periproctitis.
	Hepatis congestio.	Peritonitis.
Catarrhus intestinalis acutus.	Hepatitis acuta.	Pharyngitis.
	Hepatitis chronica.	Stomatitis.
Catarrhus intestinalis chronicus.	Hepatitis suppurativa	Tonsillitis.
	Hypertrophia tonsillaris.	Typhlitis.
Cholelithiasis.		Ulcus gastricum.
Colica.	Icterus.	Uvula descendens.
Constipatio.	Intestini recti stricture.	Other diseases of this class.
Dentis caries.		

SUBSIDIARY CLASS 2.—DISEASES OF THE CIRCULATORY APPARATUS.

A—Blood Vessels.

Aneurysma.	Cordis palpitatio.	Myocarditis.
Angina pectoris.	Cordis valvularum morbus.	Pericarditis.
Arteriosclerosis.		Phlebitis.
Cordis dilatatio.	Embolismus.	Thrombosis.
Cordis hypertrophia.	Endocarditis.	Varix.

B—LYMPHATICS.

Bronchocele.	Lymphangitis.	Other diseases of this class.
Lymphadenitis.	Splenypertrophia.	

SUBSIDIARY CLASS 3.—DISEASES OF THE RESPIRATORY APPARATUS.

Asthma.	Emphysema pulmonalis.	Pleuritis acuta.
Bronchopneumonitis.		Pleuritis chronica.
Bronchitis acuta.	Hemoptysis.	Pleuritis purulenta.
Bronchitis chronica.	Laryngitis acuta.	Pneumothorax.
Catarrhus bronchialis.	Laryngitis chronica.	Other dis's of this class.
	Edema pulmonalis.	

CLASS IX.—DISEASES OF THE MOTORY APPARATUS.

Ankylosis.	Gangrena.	Periostitis.
Arthritis.	Myalgia acuta.	Synovitis.
Arthritis deformans.	Myalgia chronica.	Thecitis.
Bursitis.	Necrosis.	Other diseases of this class.
Caries.	Ostitis.	
Contractura.	Osteomyelitis.	

CLASS X.—DISEASES OF THE CUTANEOUS APPARATUS.

Abscessus.	Furunculus.	Pityriasis.
Acne.	Herpes simplex.	Prurigo.
Carbunculus.	Herpes zoster.	Psoriasis.
Cellulitis.	Impetigo.	Ulcus.
Clavus.	Lichen.	Unguis involutus.
Cutis fissuræ.	Onychia.	Urticaria.
Ecthyma.	Paronychia.	Verruca.
Eczema.	Pemphigus.	Other diseases of this class.
Erythema.	Pernio.	

CLASS XI.—VENEREAL DISEASES AND DISEASES OF THE GENO-URINARY APPARATUS.

Adenitis inguinalis (venereal).	Hydrocele.	Spermatorrhea.
	Nephritis acuta.	Syphilis consecutiva.
Arthritis gonorrhoica.	Nephritis chronica.	Syphilis primitiva.
Balanitis.	Nephrolithiasis.	Urethræ strictura.
Calculus.	Ophthalmia gonorrhoica.	Urethritis simplex.
Chancroid.		Urina suppressa.
Cystitis.	Orchitis.	Urinæ retentio.
Enuresis.	Paraphimosis.	Varicocele.
Epididymitis.	Perinephritis.	Verruca acuminata.
Fistula urinalis.	Phimosis.	Other diseases of this class.
Gonorrhea.	Prostatitis.	
Hematuria.	Pyelitis.	

CLASS XII.—CYSTS AND NEW GROWTHS.

Adenoma.	Epithelioma.	Neuroma.
Angioma.	Fibroma.	Osteoma.
Carcinoma.	Glioma.	Sarcoma.
Chondroma.	Lipoma.	Other diseases of this class.
Cystis.	Myxoma.	

CLASS XIII.—INJURIES.

Abrasio.	Fractura.	Sole excoctus.
Ambustio ex calore.	Fulminis ictus.	Stremma.
Ambustio ex frigore.	Hernia.	Virium defectio.
Asphyxia.	Ictus electricus.	Vulnus contusum.
Asphyxia ex submersione.	Luxatio.	Vulnus incisum.
	Membranæ tympani ruptio.	Vulnus laceratum.
Concussio.		Vulnus punctum.
Contusio.	Membri clades.	Vulnus sclopeticum.
Deformitas.	Musculi ruptio.	Other diseases of this class.
Fames.	Visceris ruptio.	
	Sitis.	

CLASS XIV.—EXTRANEOUS BODIES.

Corpus extraneum.

CLASS XV.—POISONS.

Alcoholismus.	Venenum irritans.	Vulnus venenatum.
Dermatitis venenata.	Venenum neuroticum	Other dis's of this class.

The form must not be altered by erasure nor interlineation, and the names of the diseases specified shall be employed in classification and diagnosis whenever practicable. Diseases not included in this table shall be returned as "Other diseases of this class," in the class to which they belong, and, observing the same classification, shall be specified alphabetically in the "Supplementary Table," page 12, care being taken to avoid terms synonymous with those already employed.

No symptom shall be considered as the diagnosis of any case when it is practicable to classify it under the disease which is its cause.

Each genus shall include its varieties unless the variety appear in the table, *e.g.*, melancholia includes nostalgia, hypochondriasis, lypothymia, etc.; neuralgia includes trigeminal, occipital, cervico-brachial, and intercostal neuralgias, neuralgias of the joints, genitals, rectum, etc., but scatica, gastralgia, and certain others occupy places of their own; amblyopia includes hemeralopia, nyctalopia, etc.; asthenopia includes asthenopia muscularis, etc.; meningitis includes hemorrhagic pachymeningitis, leptomeningitis, etc.; alcoholismus includes delirium tremens, ebriositas, etc.; myalgia includes omalgia, lumbago, rheumatic torticollis, pleurodynia, etc.

In making a diagnosis, preference shall be given to the primary disease except where the secondary disease, specified in the nomenclature, is the main or only cause of admission to the sick list or retention thereon, or overshadows the primary disease, *e.g.*, adenitis inguinalis, orchitis, or epididymitis may be the main cause of admission or the only cause of retention on the sick list though co-existing with gonorrhea; sclerosis spinalis posterior may overshadow syphilis consecutiva, or arthritis gonorrhoica, gonorrhea, etc.

Army Changes. Official list of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from April 6, 1895, to April 12, 1895.

Capt. REUBEN L. ROBERTSON, Asst. Surgeon, is granted leave of absence to and including July 3, 1895, on which date his resignation has been accepted by the President to take effect.

Capt. JAMES E. PILCHER, Asst. Surgeon, is granted leave of absence for two months, on surgeon's certificate of disability.

Capt. WILLIAM B. BANISTER, Asst. Surgeon, is relieved from duty at Ft. McIntosh, Texas, and ordered to Ft. Omaha, Neb., for duty.

First Lieut. FREDERICK P. REYNOLDS, Asst. Surgeon, is granted leave of absence for one month, to take effect upon his relief from duty at the U. S. Military Academy, West Point, N. Y.

The following named officers will report in person to Major CALVIN DEWITT, surgeon, President of the examining board appointed to meet at Ft. Leavenworth, Kan., on Wednesday, May 1, 1895, at such time as they may be required by the board, for examination as to their fitness for promotion, and upon conclusion of their examinations, will return to their proper stations: First Lieut. THOMAS U. RAYNOR, Asst. Surgeon: First Lieut. HENRY D. SNYDER, Asst. Surgeon; First. Lieut. ALLEN M. SMITH, Asst. Surgeon; First. Lieut. JOSEPH T. CLARKE, Asst. Surgeon.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the week ending April 13, 1895.

P. A. Surgeon G. McC. PICKRELL, detached from U. S. S. "Newark," and granted three months' leave.

Asst. Surgeon A. W. DUNBAR, detached from U. S. R. S. "Vermont," and ordered to the U. S. S. "Newark."

Asst. Surgeon HENRY LA MOTTE, detached from U. S. S. "Newark," ordered home and two months' leave.

Asst. Surgeon C. P. BAGG, detached from U. S. N. Hospital, Mare Island, Cal., and to the U. S. S. "Monterey."

LETTERS RECEIVED.

Anderson, Wm., Indiana, Pa.; Andrews, B. J., Burlington, Vt.

Bonar, R. W., Socorro, N. M.; Breedlove, J. W., Fort Smith, Ark.; Barr, J. Watter, Keokuk, Iowa; Bullard, W. M., Wickes, Mont.; Biddle, A. G., Detroit, Mich.; Battle & Co., St. Louis, Mo.

Cutter, John A., New York, N. Y.; Carter, J. M. G., Waukegan, Ill.; Cone, Andrew, New York, N. Y.; Cook, G. F., Oxford, Ohio; Case, W. E., Poughkeepsie, N. Y.

Dering, A. R., Chicago, Ill.; Delaup, S. P., New Orleans, La.

Eckelman, F. C., Elkhart, Ind.

Fringer, W. R., Rockford, Ill.; Fehn, Julius, Hoboken, N. J.; Fernandez, D., Jacksonville, Fla.

Gorgas, L. D., Chicago, Ill.; Gores, Dr., Cincinnati, Ohio; Gallup, Benj. E., Chicago, Ill.

Hanell, R. F., Ruston, La.; Hart, B. F., Marietta, Ohio; Hayne, Henry W. (2), Hummel, A. L. (3), Philadelphia, Pa.; Herald-Despatch Co., Decatur, Ill.; Haralson, H. H., Forest, Miss.; Hakanson, A., South Chicago, Ill.; Hutchinson, Mahlon, Washington, D. C.; Hengst, D. A., Pittsburg, Pa.; Hartley, Henry A., Chicago, Ill.

Jordan, J. R., Monmery, Ala.; Jelks, J. T., Hot Springs, Ark.; Jones, W. D. (2), Rising City, Neb.

Kerrick, H. C., Brocton, Ill.; Kerr, W. W., San Francisco, Cal.; Kelly, Galion, Ohio; Kistler, O. F., Wilkes Barre, Pa.

Lyon, B. E., Dubuque, Iowa; Lohn & Fink, New York, N. Y.; Lewis, J. B.; Waseca, Minn.; Lea Bros. & Co., Philadelphia, Pa.; Lundgren, C. E., Jamestown, N. Y.

McCurdy, S. L., Pittsburg, Pa.; Medical Herald Co., St. Joseph, Mo.; Mint, Delaski, Chicago, Ill.; Malone, Mrs. Bridw., Waukesha, Wis.; Marshall Printing Co., (2) Marshalltown, Iowa; Marshall, Clara, Philadelphia, Pa.; Morgan, Jas. Dudley, Washington, D. C.; Morse, Lyman D., Advertising Agency, New York, N. Y.; Matthews, F. B., Jacksonville, Fla.; Maltine Mnfg. Co., New York, N. Y.

Nor Inquiry, Evanston, Ill.; North, N. L., Brooklyn, N. Y.

Ollino, G., San Francisco, Cal.

Purnell, J. R. R., Snow Hill, Md.; Plummer, S. C. Jr., Chicago, Ill.; Parke, Davis & Co. (2), Detroit, Mich.; Porcher, W. P., Charleston, S. C.; Publisher's Collection Agency, St. Paul, Minn.; Pennell, W. W., Fredericktown, Ohio; Page, J. F., Mystic, Iowa; Pollak, S., St. Louis, Mo.

Rational Chemical Co., St. Louis, Mo.; Robinson, R. D., Chicago, Ill.; Rumbold, Thos. F., San Francisco, Ill.; Reynolds, A., Clinton, Iowa.

Schoenerhorbs, H., Honesdale, Pa.; Stowell, Chas. A., Washington, D. C.; Schulze-Berge & Koechl, New York, N. Y.; Steiger, E. & Co., New York, N. Y.; Suiter, A. Walter, Herkimer, N. Y.; Schneck, J., Mt. Carmel, Ill.; Sellman, W. A., Baltimore, Md.; Stewart, F. E., Detroit, Mich.; Stearns, F. & Co. (2), Detroit, Mich.

Turner, S. W., Chester, Conn.; Tieste, L. E., Brooklyn, N. Y.; Trumbauer, Chas., Jesup, Iowa; Tylor, O. F., Magnolia, Ill.; Thorp, Edw. Y., New York, N. Y.

Vail, H. M., Rock Rapids, Iowa.

Werner, O. E., Tigerton, Wis.; White, Geo, W., Boston, Mass.; Western Publishing House, Chicago, Ill.; Warner, W. E. & Co., Philadelphia, Pa.; Webb, J. A., Providence, R. I.; West, W. F., Waxahachie, Texas; Whitten, T. J., Nokomis, Ill.; Wiggins, J. L., East St. Louis, Ill.